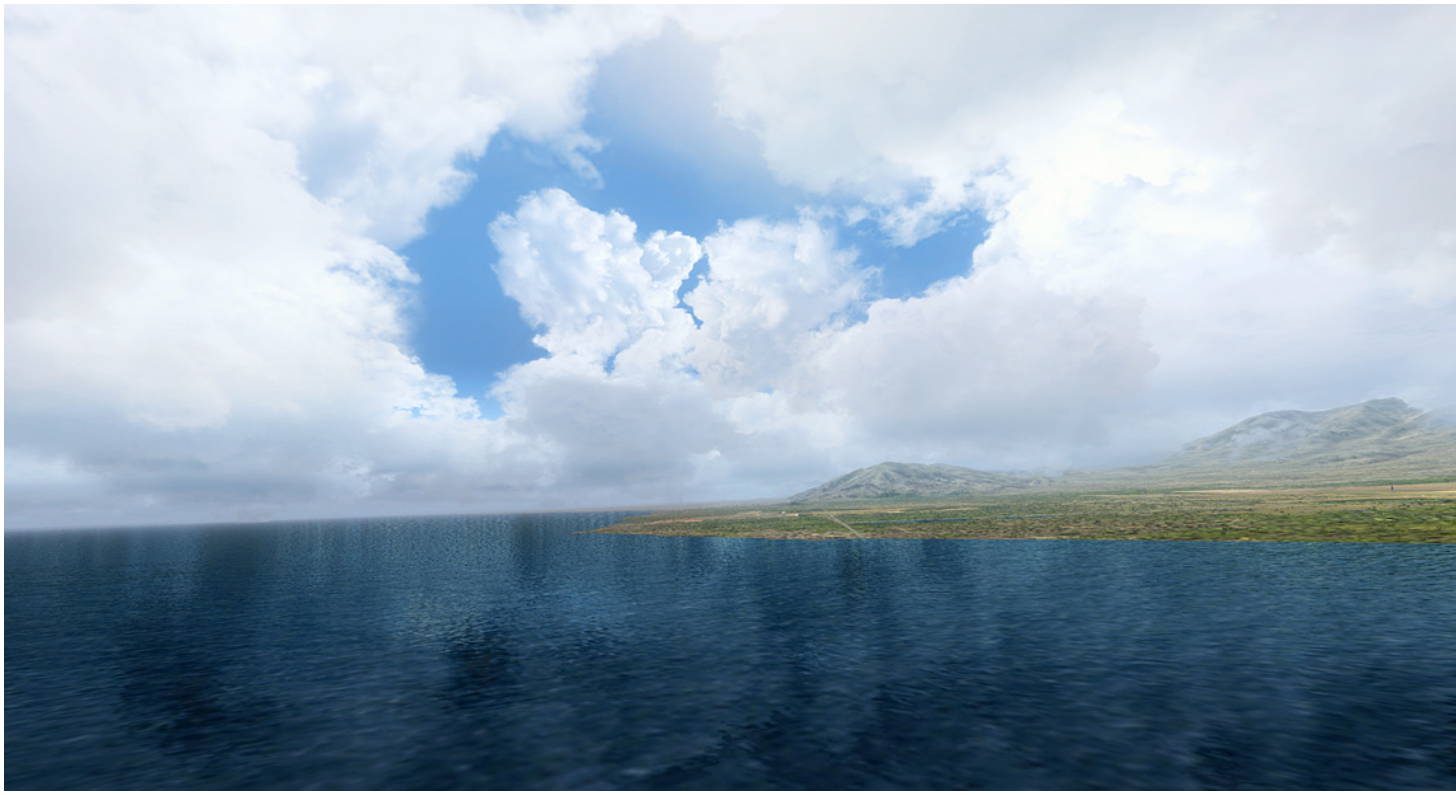
Real Environment Xtreme™ - FS2004

Version 1.0

User Manual November 2009



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REX FS2004 Introduction

Welcome to Real Environment Xtreme, a complete weather, environment, and flight planning add-on for Microsoft Flight Simulator 2004. The development team of Real Environment Xtreme is committed to maximizing the weather and flight realism experienced by its flight simulator customers and we feel the REX has come a long way towards achieving this goal. REX is not a finished product, but a living breathing work in progress and we have plans to introduce new features in the future as we develop and evaluate them.

This User Manual is divided into several parts:

1. An overview to give new and previous users alike an idea of what REX is capable of.

2. An installation section.

3. A large section detailing every feature of REX.

Overview

REX is a full weather environment creation, display, and manipulation program which includes a robust selection of beautiful user or automatically selectable sky, cloud themes and other environment textures, real world and custom weather generators, and real time weather reporting & updating.

A feature that stands out is the automatic selection of real time, real world textures based on the actual weather at the arrival and departure airports. In addition, REX allows you to control many of the FS9 water textures and effects, airport environment textures, sun textures, and lighting effects that are so critical to the enjoyment of and immersion in the flight simulator experience.

Finally, REX also has full flight planning and in-flight weather monitoring tools to enhance the realism. All of these features can be fully manipulated to your individual taste.

Once REX is installed and the various setup options have been selected, you will be presented with a Main Menu that consists of several Quick Start buttons that allow you to choose using real-world weather or create custom weather and:

1. Just fly, without the need to perform any actions. REX will select all texture themes at random, download real weather or custom build the weather, depending on what you choose, install the weather textures needed for the particular weather conditions, generate a flight plan, and start FS2004.

2. Create custom texture themes, but allow REX to accomplish all other tasks.

3. Create a flight plan but allow REX to accomplish all other tasks.

Additionally you can access any of the REX sub-menus that will allow complete customization and manipulation via a row of tabs across the top of the user interface. The flight planner can import flight plans created in FS2004, flight plans created by REX previously, as well as import flight plans from some of the more popular third party flight planning tools available on the market. We will continue to implement the ability to import different formats as users request them. If you choose not to use the Quick Start buttons on the Main Menu, REX offers full customization of all textures, as well as the flight plan and weather creation.

New in REX is a weather page that displays weather details, including surface and aloft winds, pressure, temperature, symbolized metars, TAF and PIREP reports of any airport entered into the search box, as well as links to the weather avoidance maps and flight planner. The weather data can also be refreshed at any time with the use of a **LOAD WX** button and this weather can then be immediately loaded into FS2004. The WASys includes a refresh weather button, which re-downloads and updates the weather in FS2004, a minimize button that allows the WASys to be dropped to the icon on the taskbar and a **TURN OFF** button that shuts down the weather engine if needed or desired.

Additionally, the overall flow of how all components work together from the FS2004 version of REX, have been completely reprogrammed to work in harmony for the FS2004 platform, including functionality of the weather engine, flight planner, random weather generator, WASys, and general operations.

In this manual, buttons and tabs that can be clicked or pressed are spelled exactly as seen on screen and highlighted in bold, such as the **FLY NOW!** button or the **main** tab, as are references to options and choices that can be selected/unselected or checked/unchecked, such as **Enable Auto Launch REX Weather Engine** option. Menu names are also spelled exactly as you can see them on screen and highlighted in bold as in this example **FLIGHT PLANNER**. Messages and notations that are on screen in color will also be in color in this manual in their color, such as **Completed!**. Drive, directory, folder and file names and other computer locations and commands will be shown in italics and bolded, such as ***C:\Program Files\Real Environment Xtreme FS2004***

Thank you for choosing Real Environment Xtreme FS2004 for your flight simulator environment add-on. We are confident that you will enjoy!

Configuration

When installation is completed, you should see that REX is now in your Program Files list and you should have an REX icon and REX Weather Engine on your desktop. Double-click on the REX icon or select REX from your Program Files menu and REX will start. After the program starts, your screen will show the **CONFIGURATION MANAGER** and should look like below (Figure 1). This is the page that allows REX to know where FS2004 critical files are located, as well as allowing you to setup and customize important feature-specific parameters.

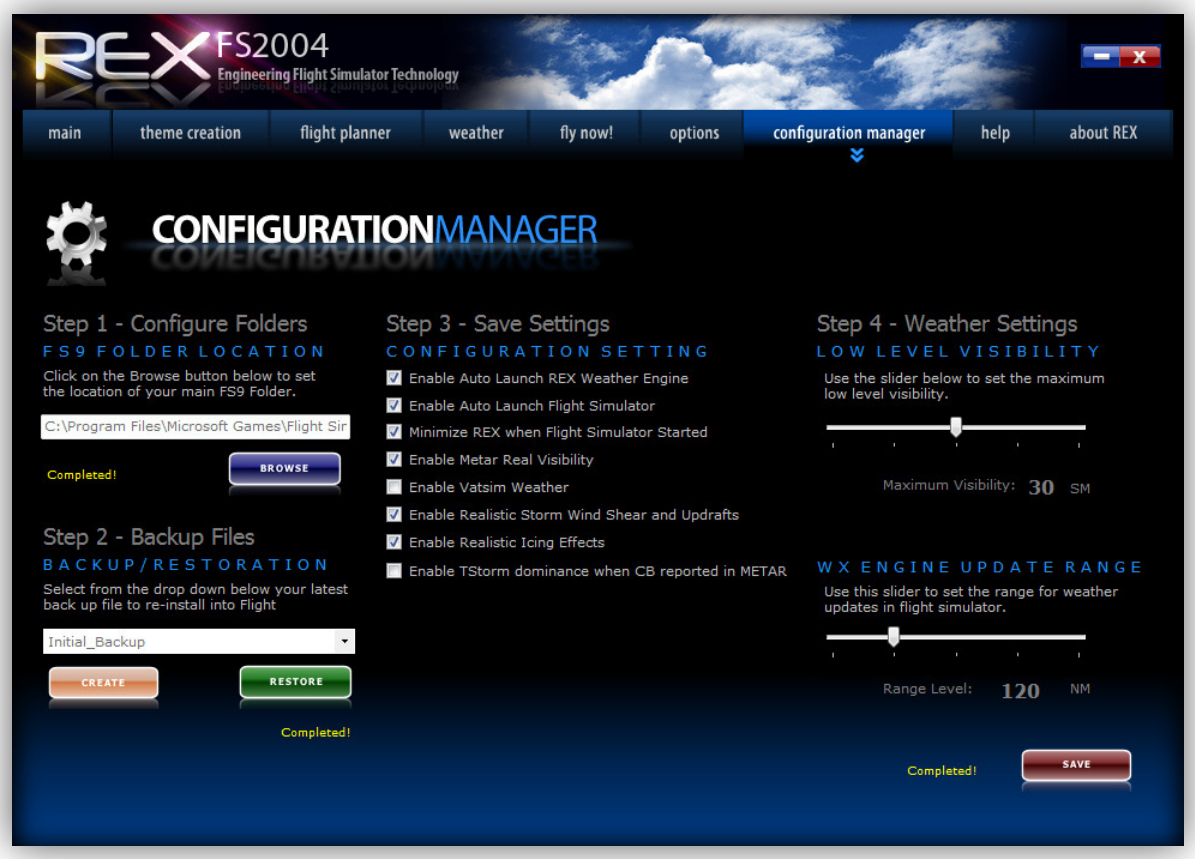

Figure 1

Step 1 - Configure Folders

When opened for the first time, REX will automatically try and locate your fs9.exe file location. This is VERY IMPORTANT as it enables REX to communicate with and transfer textures to FS2004. If the process fails you will see a blank field in the location that needs to be completed. Notice that in **Step 1** a yellow **Completed!** alert next to each button indicates that the files were found by REX and this step is marked as "completed". Make sure that each of these steps have the **Completed!** alert next to them. The areas displaying **Not Completed!** mean that these areas need your attention before you can move on.

If REX does not find your fs9.exe folder, click on "Browse" and browse to wherever you installed FS2004 and click on the folder containing the fs9.exe. When this area shows the yellow **Completed!** It is safe to move on to **Step 2**.

Configuration - *continued*

Step 2 - Backup Files

In case an uninstall or reinstall is necessary, REX saves a backup copy of all the texture and other files that REX will modify. **If necessary, clicking on Restore will restore all the files *to the condition that existed before REX was installed.*** It's important to realize that REX is going to backup whatever textures you have installed *now*. If no other add-ons have been installed that modify clouds, water, airport environment, sun, or lights, then the backup will consist of the FS2004 default files. If you have installed any of these other add-ons, the backup will contain these files, not FS2004 default files. If default FS2004 textures are desired in the backup, the other add-ons must be restored/uninstalled before running the REX backup. When ready to create the backup file, click on **CREATE** and REX will create this folder for you.

When this backup process is finished, a folder with the name "**Initial_Backup**" will be displayed in the backup window and the yellow **Completed!** alert will be displayed below the **RESTORE** button. Simply clicking on the RESTORE button will restore the files to what they were before REX was installed. Finally, move on to **Step 3.**

Step 3 - Configuration Settings

Under **Step 3** you will see a number of choices regarding how REX will function. These settings are described below:

Enable Auto Launch REX Weather Engine - This will allow the REX weather engine to be used for weather related tasks inside FS2004. If you wish to use another weather engine, simply uncheck this box and the REX weather engine will not start. Users can still enjoy the wonderful textures that REX provides.

NOTE: Another thing that can be done at this time is to navigate to your REX program folder (typically ***C:\Program Files\Real Environment Xtreme FS2004***\) and locate the file ***rexwxengine2.exe*** with its new icon. Right click on this file and select and select Create Shortcut. This will place a shortcut to the weather engine on your desktop (if you don't currently have one.) You can drag this icon to your desktop Quick Launch area if you like. Clicking on this icon will start the weather engine whether FS2004 or the REX GUI is running or not. This can come in handy for a number of reasons, but mainly it gives you a convenient way to restart the weather engine in the event a problem arises and you need to stop and start it, OR you stopped the weather engine by accident and need to restart.

Enable Auto Launch Flight Simulator - This allows REX to autostart FS2004 from within the REX GUI. This is a handy feature that is activated any time you select **FLY NOW!** when in REX.

Minimize REX when Flight Simulator Started - So that you don't have to manually minimize the REX GUI after you have started a flight, we have provided this option. Whenever **FLY NOW!** is pressed, the menu will return to the **MAIN** menu and the REX GUI will minimize to the taskbar. As we'll be described later in the manual, **FLY NOW!** is the button that actually starts your flight and is used after you have finished with all your tasks in the REX GUI.

Configuration - *continued*

Enable Metar Real Visibility - This option overrides the visibility slider whenever the weather station metar of the airport you are flying around shows a visibility of less than 10 SM. REX allows (with user-control) the visibility level to be forced from 10-50 SM. When selected, this completely eliminates the low level visibility no matter what the visibility actually is supposed to be. However, many users will find this solution somewhat unrealistic and so we made an effort to allow low level visibility under conditions when the metar is calling for limited visibility. Checking this option allows the lower visibility to be displayed if the metar is calling for this.

Enable VATSIM Weather - Many of our users fly regularly on the VATSIM Network (Virtual Air Traffic Simulation Network-www.vatsim.net). This network has its own weather servers. Because this can cause a lot of trouble with REX's own weather, many users have asked if we could have the REX weather engine be able to download the weather data from the VATSIM servers instead of only from the server normally used. Check this box if you want REX to download weather data from the VATSIM servers. We are considering adding this feature in the future for other networks, such as IVAO.

Enable Realistic Storm Wind Shear and Updrafts - Many users have asked us to make the experience of flying in stormy weather more realistic. The REX weather engine enables users to have that scary experience of flying in thunderstorms and other severe weather. If it is found that this also increases the FS2004 wind shifts and other wind anomalies to an unacceptable and/or unrealistic level, disable this feature to give more smooth realistic transition experience between clear, cloudy, and storm conditions. Enabling will force drastic shear and turbulence with stormy conditions.

Enable Realistic Icing Effects - This option increases the effect of cloud icing on the airframe of the aircraft.

Enable Thunderstorm Dominance When CB Reported In Metar - This feature increases the coverage of thunderstorms when thunderstorms are found in the metar report.

After all choices are considered and made in **Step 3**, move on to **Step 4**. If you want to change these settings later or aren't sure yet what settings you want now, don't worry, these can all be changed anytime by clicking on the **Configuration Manager** tab on the top **Navigation Menu**.

Configuration - *continued*

Step 4 - Weather Settings

The settings in this section will allow you to control some of the parameters that the weather engine will use to depict visibility and weather update frequency.

Low Level Visibility Slider - This is a new feature for REX and as discussed under the **Enable Metar Real Visibility** section above, this slider is how you can eliminate the low level haze issue seen in FS2004. The slider has the following values, by using the mouse to grab the slider and moving it left and right: 10, 20, 30, 40 and 50 Statute Miles (SM). Move this slider further to the right to see what value is best. This will take some experimenting and combined with the **Enable Metar Real Visibility** option may allow a satisfactory solution to the haze problem. Every user will have their own ideas about this and hopefully most users can arrive at a satisfactory compromise between haze and reality. We realize that this is not an optimum solution for everyone but FS2004 does not allow many other choices in this regard.

WX Engine Update Range - The REX weather engine does not use time as a basis for when to update but rather, uses distance traveled instead. You therefore can adjust the frequency the weather engine updates by adjusting this slider to the left or right, increasing or decreasing the update radius. This effectively adjusts the distance you have to travel before the weather engine will update. If you want the weather engine to update less frequently, increase the update radius by moving the slider to the right. Move the slider to the left if you want the weather engine to update more frequently. The slider can be moved by grabbing the slider bar with the mouse and moving it to the desired position. The available distances are 60, 120 240, and 300 nm. Once the aircraft has traveled beyond this radius from the last update position, the weather engine will update again.

Below are a few tips in order to better assist in your choice:

1) It's vital to realize that the weather engine will not update if the aircraft has not traveled approximately the distance the slider is set at. This means that if aircraft is flying in a relatively small area around the departure airport, such as sightseeing, but has not traveled far enough to fly beyond the update radius, the weather engine will not update. It doesn't matter how long the aircraft has been flying or what route the aircraft has used nor other airports the aircraft has been to; what is critical is that the aircraft needs to fly beyond that radius in order to update. Also, the weather will not update while the aircraft is sitting on the ground at the airport, no matter how long it sits there. At this point the user has two choices: 1) Force a weather update by using the **LOAD WX** button on the WASys or 2) set the slider at a low enough value that the aircraft will easily fly beyond it.

2) You will need to consider what type of aircraft you want to fly and how fast it flies. A single engine Cessna has a speed of around 100 kts. If the update radius is set at 300 nm, that aircraft will have to fly 3 hours before the weather will update even once. That is just about the maximum range of that aircraft. Similarly, a jet flying at 36,000' is flying at 500-600 kts, which is about 8-10 nm/min. This means that an update radius of 60 nm will result in an update every 6-7 minutes. For slow and low fliers, a value of 60 nm is about right and for heavy iron fliers, 240 works well when over populated areas. 300 nm is good if flying long distances over desert, oceans, or where there aren't many weather stations.

Configuration - *continued*

3) Users that want to fly near and around the poles will find some very unexpected behavior as the weather engine will update every 30 seconds, even more often if very close to the pole, N89 for example. The solution here is to just turn off the weather engine with the **TURN OFF** button on the WASys screen as described later until lower latitudes are reached again, lower being around 80N or S. This is just an unavoidable consequence of how distance is calculated by the weather engine.

4) You may not want the weather engine to update during climbs or descent into the airport. In this case, you must evaluate what these distances are and set the sliders accordingly. If the slider is set too high the weather may not update for some time and the weather could not be what you expect. Set it too low and updates will be occurring during critical phases of flight. Jets are a good example here. Typically the descent point is about 100-120 nm away from the airport. If the slider is set at 300 nm, the weather may not update at all again until arrival at the airport. Another danger with this is that the airport may lie just outside this radius and the weather will update just upon final approach. A good strategy if using 240 or 300 nm slider settings is to force a weather update either just before descent or somewhere along the descent path that is convenient (NOT when there is a long line of online traffic behind you carefully set up by the controller with very little room for error) by use of the **LOAD WX** button on the WASys screen described later.

5) The slider can be changed during a flight by first closing down the weather engine, changing the slider in the REX GUI followed by restarting the weather engine and re-downloading the weather. This is one of those cases where having the weather engine icon in your taskbar as described earlier is convenient as it makes this task quick and easy.

6) The update radius slider also determines how much data will be downloaded and processed at each update. The higher settings will require the weather engine to download more data than the lower settings. During the time that the weather engine is downloading and processing data, you may experience a moment or two of stuttering or a drop in frame rate. This effect will be heightened for the 300 nm setting and less noticeable with the 60 nm setting. If you are experiencing an unacceptable loss of performance, try lowering the slider setting until the performance loss is acceptable. After the update is finished, the new weather will be injected into FS2004. Sometimes this weather can be quite different than what was depicted before the update started. This effect will be more dramatic when using high update radius settings than with lower settings. If you want less pronounced weather changes after weather updating, try using lower slider settings.

After this **Step 4** is completed, the **SAVE** button can be clicked and all settings from **Steps 1 to 4** will be saved. Upon reopening this page all the Steps should display a yellow **Completed!** alert by each step. After the save process is complete, you will be taken to the **OPTIONS** page.

We highly recommend at this point to save to a DVD all the files you downloaded as well as the *Initial_Backup* folder you just made found in the Real Environment Xtreme FS2004 program folder in the Themes\Backup folder in case you need to reinstall REX again for some reason. This will save you the time and trouble of re-downloading them all again.

Uninstall Procedure

If you ever need to uninstall REX, be sure to first restore your FS2004 default textures by going to the **CONFIGURATION MANAGER** page and click on the **RESTORE** button. After this restore has completed, close REX and go to the ***Windows Control Panel\Add or Remove Programs*** and click on ***Real Environment Xtreme FS2004*** and select ***Remove***. This will uninstall REX from your system. After this process completes, browse to the location where you installed REX FS2004 (normally ***C:\Program Files\Real Environment Xtreme FS2004***) and delete that particular folder. After this is finished, browse to ***C:\User\Documents and Settings\Local Settings\Application Data*** for Windows XP and ***C:\Users\Your Name\AppData\Local\Real_Environment_Simulati*** for Windows Vista and delete that folder.

VERY IMPORTANT! FSX users of REX2: Be very carefull not to delete those folders that pertain to REX2 for FSX!

You can use a registry cleaner to remove any REX registry entries if you want to make sure that REX is completely uninstalled.

Options

Immediately after the settings in the **CONFIGURATION MANAGER** have been completed, the **OPTIONS** page is displayed. (Figure 2)

This is the area where you can customize many aspects of how REX will create and display the texture themes. The selection process simply involves placing or removing a check in the box next to the desired option.

The menu is divided into three sections: (1) settings that control which textures are installed into FS2004, (2) settings that control the resolution of textures, and (3) an overall system performance section where you can allow REX to decide which settings are best depending on the capabilities of your computer system.

The green **DE-SELECT** button allows you to easily and quickly deselect/select all settings on this menu.

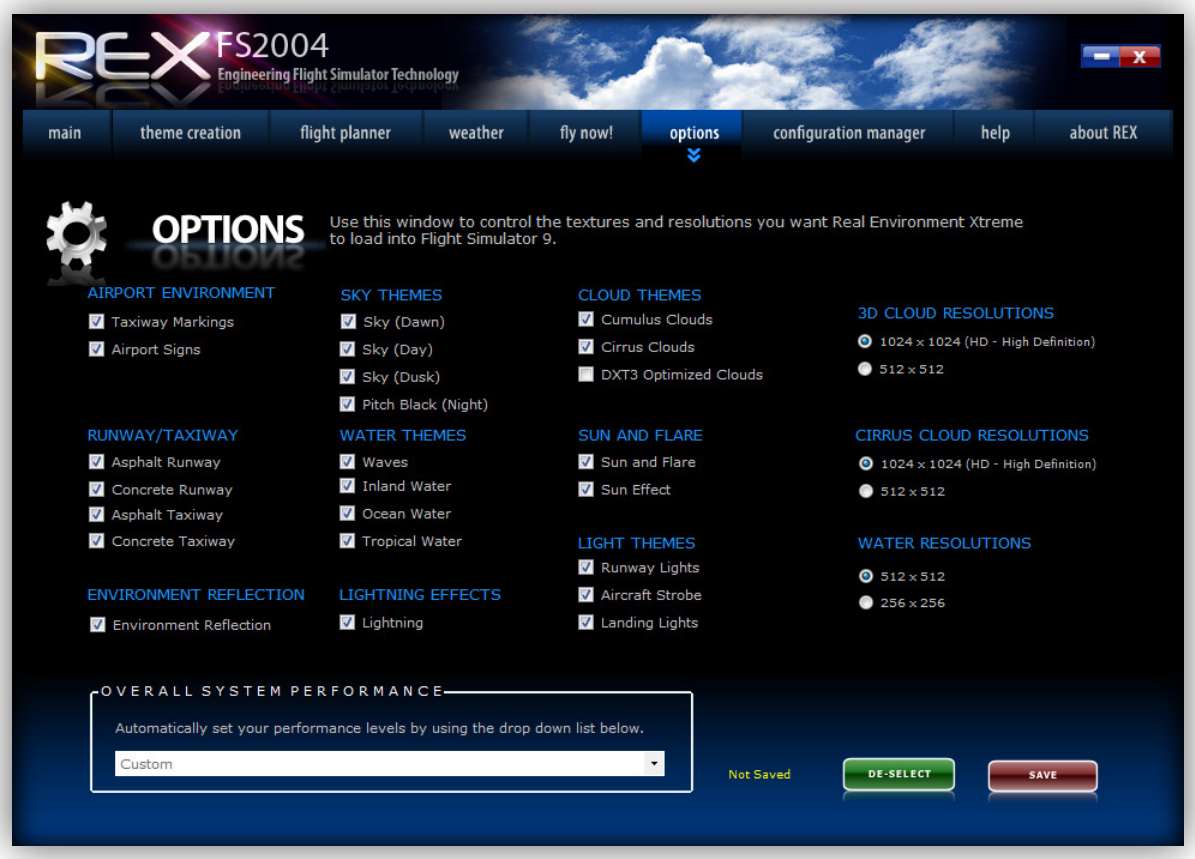

Figure 2

Options - *continued*

When the selection of settings is complete, you must save them by clicking the **SAVE** button. **A few notes about this menu need to be mentioned here:**

1. This menu controls what textures are installed into FS2004. As such, any changes made to this menu will not take affect until the textures are reloaded into FS2004.

2. **Textures cannot be loaded into FS2004 while FS2004 is running.** Many users have made the mistake of trying to install textures while FS2004 was running. The result is a crash in FS2004, REX or both. So if you get a crash, a hang, or some other unexplained behavior while doing this process, quickly check to see if FS2004 is running.

3. Use of the 1024 textures can and will cause performance issues for some lower end systems. **Use of the higher resolution textures will result in lower frame rates and performance whereas use of the lower resolution textures will result in lower quality.** If performance issues are experienced, try the lower resolution textures. These lower resolution textures are still exceptional and many people find that they like and use these textures even though they have higher end systems.

4. Once the textures have been loaded into FS2004, un-checking the box does ***NOT*** cause them to be uninstalled. It means that you can load the textures into FS2004 and then uncheck that box and REX won't install them again in the future. As described below for the water textures, this can save a lot of time. The down side is that the **RESTORE** feature on the **CONFIGURATION MANAGER** page must be used if you desire to uninstall textures that aren't going to be overwritten by REX. REX does not currently have the ability to uninstall individual texture groups.

5. It will require anywhere from 4 to 8 minutes, depending on your system, to load the textures if all the boxes are checked. This time can be significantly reduced (down to 1 minute or so) by un-checking all the water texture boxes. For those folks that want water textures and want to continue to experiment with various non-water texture sets, but don't want to wait the required 4-8 minutes, we recommend that you load the water textures you like once, then uncheck all the water texture boxes for the subsequent texture installs. Because the water textures were already installed, they will remain installed throughout subsequent texture installs as described above and the install time will drop significantly. If you want to experiment with different water textures, those water settings boxes must be checked and you will have no choice but to wait the extra time to install them.

6. The water texture animations will only be visible in FS2004 when the Water effects slider in FS2004 is set to HIGH.

Options - *continued*

Overall System Performance Settings - This drop down menu contains four system performance levels you may choose from. The bottom three are pretty self explanatory. Choose one of these three and watch how the settings in the other areas of this page change. If you want to set your own custom settings, choose **CUSTOM**.

You need to save the settings in the **OPTIONS** and **CONFIGURATION MANAGER** pages every time one or both of these pages are visited. We have found that a significant number of users had problems because one or more of these settings either changed without them knowing or they refused to save. To ensure that these settings remain, we have decided to require the users to save them each time they visit these pages, whether changes are actually made or not. We apologize for this apparent nuisance but we feel it is necessary.

Once you have selected your desired options, click on the **SAVE** button to save them. Once the options have been saved, the **MAIN** menu will appear. The setup of REX is now finished!

Main Menu

Congratulations, you have successfully installed and set up REX and are now ready to use the program. Have a look at the **MAIN** menu window shown below in Figure 3.

REX FS2004
Engineering Flight Simulator Technology
main
theme creation
flight planner
weather
fly now!
options
configuration manager
help
about REX
MAIN
Use the Quick Start buttons below to jump into areas that interest you, or use the menu bar above.
QUICK START BUTTONS
I just want to fly.
I like to create.
I want to follow a flight plan.
Click this button if you want Real Environment Xtreme to do all the work.
Click this button if you want to create your own themes.
Click this button if you want to start with a flight plan.

Figure 3

There are three large buttons along the bottom and nine small tabs along the top. The three large buttons are the **QUICK START BUTTONS** discussed earlier and allow you to quickly perform certain actions. These will each be described in more detail below.

The **main** button takes you from any place in the program to this page. The **theme creation** button takes you to the area where the textures for clouds, water, airport environment, runway/taxiways, sky, sun, lightning and lights can be experimented with, selected, and installed into FS2004. The **flight planner** tab takes you to the flight planning and preflight weather section. Weather can also be injected into FS2004 from this page. The **weather** tab takes you to the custom weather/real time weather center. The **fly now!** tab starts the weather engine and is usually the last step prior to flying. The **options** and **configuration manager** tabs take you to the pages that have already been discussed. The **help** button sends you to the area where this manual is located and the **about REX** button takes you to the area containing information on REX, the version number, the people behind it, and a message of gratitude to you, the user, for having purchased our product!

Main Menu - *continued*

Quick Start Buttons

This section is for those that don't like messing around with selecting textures, weather, generating flight plans, or reading through page after page of manuals to learn how to use these features. REX has 3 large buttons on the **MAIN** menu page and are designed to provide a flow from start to finish. The button on the far left is the **I just want to fly** button. It's the choice if you want the program to do everything. It will randomly select the textures from the **THEME CREATION** page according to the settings selected on the **OPTIONS** page, and will then create a flight plan according to the departure and destination airports selected, create or download the real weather and finally will start FS2004 and inject the weather into FS2004.

The second button from the left is the **I like to create** button, and pressing this will allow you to create themes chosen from the **THEME CREATION** page, but makes REX select the weather and inject it into FS2004. The third button from the left is the **I want to follow a flight plan** button. This allows you to generate a flight plan by using the **FLIGHT PLANNER** menu. Below is a step by step description of what each button actually performs.

I just want to fly

Figure 4

Clicking on this button brings up the window shown in Figure 5.

Main Menu - *continued*

Quick Start Buttons - *continued*

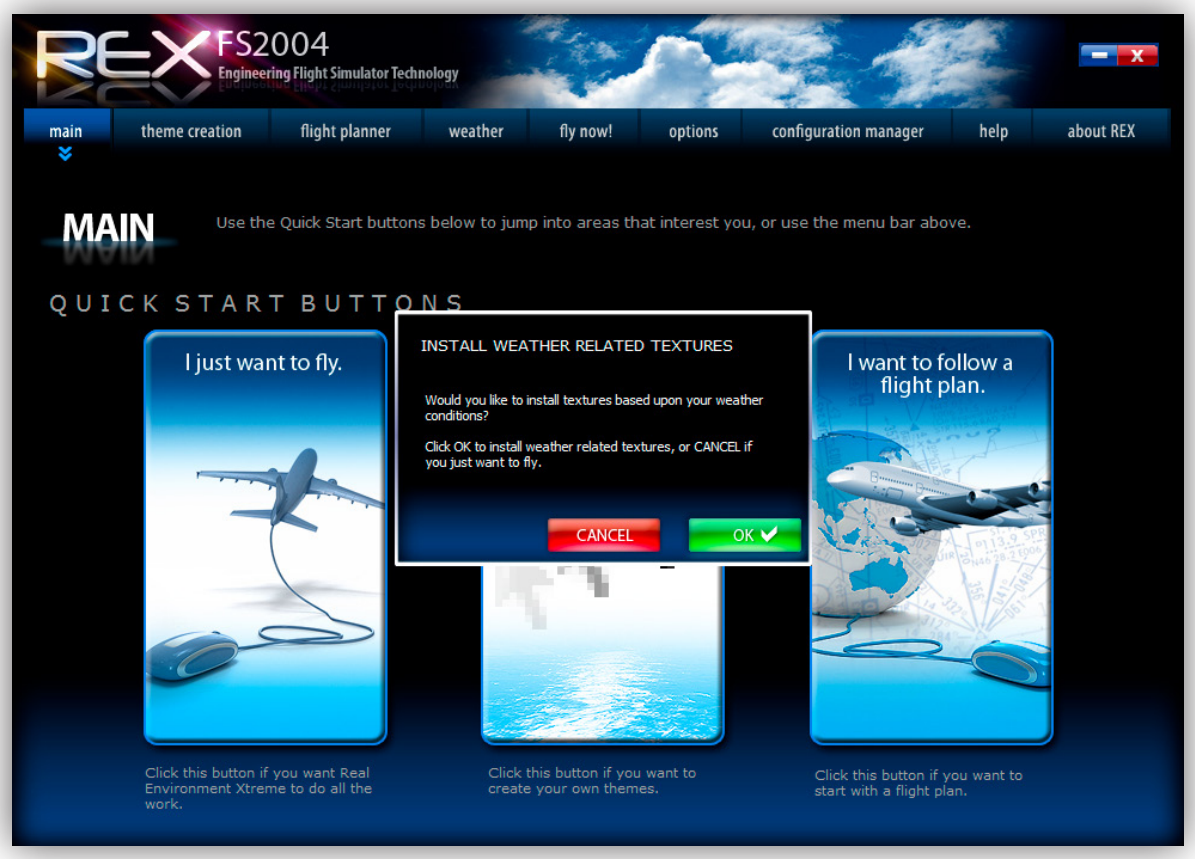
REX FS2004
Engineering Flight Simulator Technology
main
theme creation
flight planner
weather
fly now!
options
configuration manager
help
about REX
MAIN
Use the Quick Start buttons below to jump into areas that interest you, or use the menu bar above.
QUICK START BUTTONS
I just want to fly.
INSTALL WEATHER RELATED TEXTURES
Would you like to install textures based upon your weather conditions?
Click OK to install weather related textures, or CANCEL if you just want to fly.
CANCEL
OK
I want to follow a flight plan.
Click this button if you want Real Environment Xtreme to do all the work.
Click this button if you want to create your own themes.
Click this button if you want to start with a flight plan.

Figure 5

Notice the pop-up dialogue box. This is asking you if you want REX to choose a set of textures to load into FS2004 that best fits the current weather conditions at your location.

There are two choices here: (1) click on **CANCEL** and FS2004 will immediately start up (if enabled on the **CONFIGURATION MANAGER** page. If checked on the **CONFIGURATION MANAGER** page, REX will also minimize to the taskbar and the REX weather engine will also start up and use whatever textures were last loaded into FS2004 to depict the weather or (2) click on **OK** and the page shown in Figure 6 displays.

Main Menu - *continued*

Quick Start Buttons - *continued*

Figure 6

Here you are presented with several more choices. Of course the weather engine must know where you wish to fly and which weather you wish to use. Enter in the DEPARTURE and ARRIVAL airports and then select either USE REAL-TIME WEATHER, USE REX RANDOM WEATHER THEME, or USE ARCHIVED WEATHER. These choices will be explained in more detail later but basically you can either use real time weather, let REX randomly create the weather or use weather downloaded and saved from a previous flight. The CANCEL button will take you back to the MAIN menu (Figure 3) and you can start all over again if you wish.

Once the choices have been made, click on the OK button and REX will download the weather in the case of the real-time weather and will begin to install the textures into FS2004. This is REX installing a set of textures pulled from the extensive set of possibilities that can be found by examining the choices on the THEME CREATION page based on what REX understands the weather to be. The loading of these textures will take anywhere from 1-8 minutes depending on the choices made on the OPTIONS page as discussed earlier. Only texture types that have been selected in the OPTIONS page will be installed into FS2004. Those that are unchecked in the OPTIONS page will NOT be installed into FS2004.

Main Menu - *continued*

Quick Start Buttons - *continued*

Be aware that this process will overwrite any textures that were previously installed into FS2004 and that there is no way to recover what was there unless the theme was saved. Please note: whenever you install a theme, make sure to save that theme, even if it is a Random theme as you may want to use it again.

Whenever textures load in FS2004, from this menu or other menus described in this manual, you might experience a period of flashing black squares on the screen. Although alarming at first, these black squares won't do anything and will go away after the texture load process is finished. In particular, everything will go smoothly until the cumulus.bmp texture begins the conversion process. This behavior results from the ImageTool program that is used to decompress and convert the textures and there is nothing that we can do about it at this time unless we were to completely change the entire process by which textures are un-encrypted, decompressed and converted into useable bitmaps. We are working on considering other means to deal with this.

If there are still black squares remaining on the screen or some parts of the REX GUI are not completely visible, opening up a program, any program, maximizing it and then closing it again usually returns the screen to a normal state. Alternatively you can try pressing F5 to refresh the screen after returning to the desktop.

After this process has finished you are returned to the **MAIN** menu (Figure 3) and all you need to do at this point is to click on the **fly now!** tab at the top of the menu to start flying. FS2004 will start, as will the REX weather engine as evidenced by the presence of the WASys screen (Figure 49) if these options are enabled in the **CONFIGURATION** page. If they are not enabled, you will get a prompt stating you must now start FS2004. If the **Enable the REX weather Engine** is not checked, you will need to manually start the weather engine or another weather engine of your choice. You now start a flight as normal in FS2004, press the FS2004 **Fly Now** button and once FS2004 has loaded up the flight, the REX weather engine will download and inject the weather.

Main Menu - *continued*

Quick Start Buttons - *continued*

Next is the **I like to create**. and **I want to follow a flight plan**. buttons as shown below in Figures 7 & 8 below.

I like to create

Figure 7

I want to follow a flight plan

Figure 8

The **I want to create** button is for the user that wants to create the texture themes used by FS2004 to display in the simulator environment. Clicking on this button displays the window shown in Figure 9, the **THEME CREATION** window. This is the same window that comes up when the **theme creation** tab along the top of the **MAIN** menu is clicked.

The **I want to follow a flight plan** is for the user that wants to create or import a flight plan, view potential weather that may be present along the flight path, analyze the various navigation logs that REX creates, and have the program choose and install textures appropriate for the weather. Clicking on this button displays the **FLIGHT PLANNER** menu shown in Figure 10. These two features are described in more detail later.

Main Menu - *continued*

Quick Start Buttons - *continued*

Figure 9

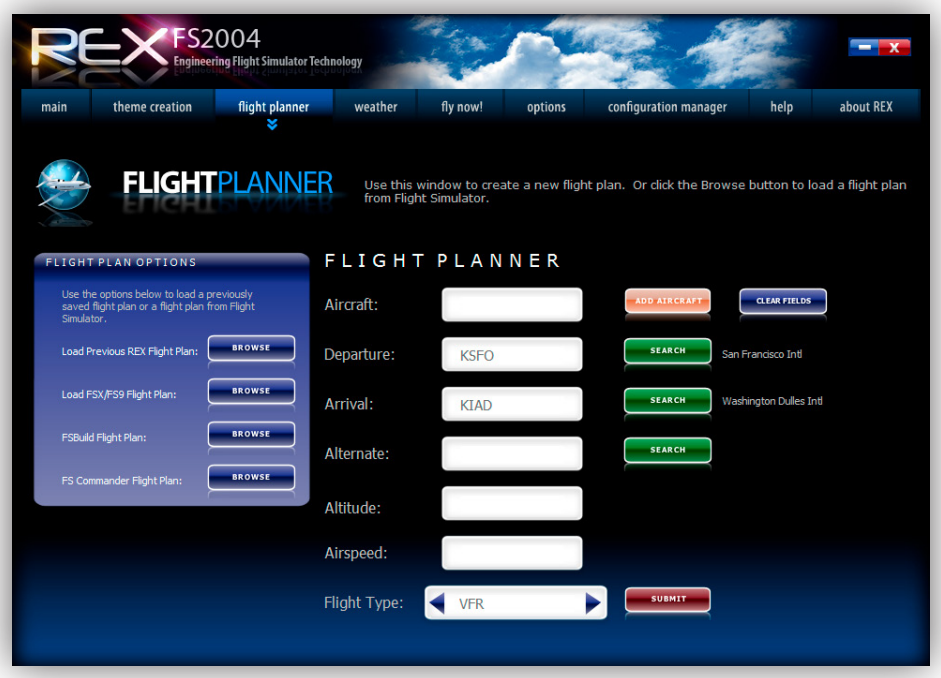

Figure 10

Theme Creation Menu

This menu consists of 10 theme windows, a **Select a Theme to Install** dropdown selection, and 4 buttons on the center and bottom right hand side of the screen. The themes are selected by clicking on of the 10 rectangular windows (described in more detail below), selecting a theme and saving it before moving on to the next theme window. When all themes have been selected, the **SAVE** button is used to name and save the overall theme.

The **INSTALL** button is used to load the textures into FS2004. The name of the installed theme is displayed in the lower left hand corner of the screen as well as the **Select a Theme to Install** window in the upper right hand corner. The **Select a Theme to Install** drop-down menu contains a list of themes shipped with REX AND any themes created by you. Highlighting a theme name will cause it to be loaded into the 10 windows of the **Theme Creation** screen and installed into FS2004 when **INSTALL** is selected. The **DELETE** button is used to delete themes from the drop-down menu**.** Highlighting a theme name and pressing the **DELETE** button will remove it from the list after the deletion confirmation. The **RANDOM** button allows REX to randomly choose themes from each of the 10 windows automatically. This is a great feature to use and is one way to have a unique and interesting flight every time. There are thousands of combinations possible. THESE ARE RANDOM TEXTURE THEMES, NOT RANDOM WEATHER. REX has a random weather generator that will be discussed later for this purpose.

Figure 11

Theme Creation Menu - *continued*

The Ten Theme Windows

These ten windows are the meat and potatoes of creating custom themes in REX. The ten windows consist of **Sky Theme**, **Cloud Theme**, **Inland Water**, **Ocean Water**, **Tropical Water**, **Wavs**, **Runway/ Taxiways**, **Airport Environment**, **Sun/Lighting**, and **Effects**. We will discuss each window and how to use them. However, after setting up one window, the other windows will be easily understood.

Sky Theme Window

Clicking on the **Sky Theme** window displays the window shown below in Figure 12, in this case, with the drop-down menu highlighted and is called the **Sky Selection** window. To understand how these windows work, let's take a detailed look. On the left hand side of the window there is a picture of what the selected **Sky Theme** looks like in-game. The name, **African Dawn** is shown in the drop down menu just under the large screenshot. On the right hand side is a screenshot of the what the theme consists of, including a short description below it. Note also the 3 tabs in the upper right hand corner of the menu. These identify the current theme as a **Sunrise** theme. There are also **Daytime** & **Sunset** themes to consider.

Figure 12

Theme Creation Menu - *continued*

Sky Theme Window - *continued*

To select another theme in the **Sunrise** category, either click on one of the two arrows under the small screenshot on the right hand side of the screen to scroll to the next theme in the list or scroll down and select another theme from the drop down menu on the left hand side of the window and choose a theme. Click on any name in the list and watch it appear in the big and small screens as in Figure 13.

In this example we have selected the **Dawn Set: Red Varanasi Sunrise** theme, now move on to the **Daytime** Theme by clicking on the **Daytime** tab in the upper right hand corner of the menu. An example of this window is shown in Fig. 14 below. In this example **Day Set: New Blue** was selected. Now scroll through the choices and again pick one.

Figure 13

Theme Creation Menu - *continued*

Sky Theme Window - *continued*

Figure 14

Theme Creation Menu - *continued*

Sky Theme Window - *continued*

Figure 15

When finished choosing a **Daytime** theme move on to the **Sunset** Theme**.** An example is shown above in Figure 15.

Here we have chosen the very beautiful **Dusk Set: Painted Desert**. Notice that the **Sky Theme** then is made up of 3 sub themes, **Sunrise**, **Daytime**, and **Sunset** and that there are a lot of choices of each to select from. Now go back and click on each of the subtheme tabs and confirm that the selections you made are still there. Click on the **SAVE** button to save your selections. Clicking **CANCEL** will cancel whatever changes were made and return to the **THEME CREATION** menu. After clicking the **SAVE** button, the **THEME CREATION** window is returned and a new picture will be displayed in the **Sky Theme** window, namely, the **Daytime** subtheme choice, which will now represent the entire **Sky Theme.**

Theme Creation Menu - *continued*

Cloud Theme Window

Clicking on the Cloud Theme window in the THEME CREATION screen opens the Cloud Theme menu shown in Figure 16. Notice that 3D Clouds is highlighted and the selection shown is one of the beautiful High Definition cloud themes, Cumulus Set: 53 HD Enabled. There are only two tabs this time, 3D Clouds, which are the cumulus clouds, and Cirrus Clouds, which are cirrus clouds. Click on the drop down menu or scroll with the arrow keys to view the various selections. The clouds have resolutions from 512 x 512 to 1024 x 1024 and the 1024 textures are known as High Definition (HD) in FS2004.

Figure 16

Notice the **Cirrus Clouds** tab, make a selection and click on the **SAVE** or **CANCEL** buttons as before.

Theme Creation Menu - *continued*

Inland Water Window

The choices in the next set of windows, the **Inland**, **Ocean Water**, and **Tropical Water** are all modified the same way, but differently than the previous windows. Sliders are additionally used to change the look of the textures further than just the themes themselves. The number of named themes for the water is less than with the other windows but the variations are potentially limitless with the sliders. This technique will be illustrated in detail here with the **Inland Water** Window. The exact same procedure is used to modify the **Ocean Water** and the **Tropical Water** options.

Figure 17 shows the **Inland Water** Window. Notice that there are two tabs, **Inland Blue** and **Inland Brown**, a drop-down window with a few water themes listed, four sliders, **Plankton**, **Saturation**, **Brightness**, and **Contrast**, and two windows above the drop-down menu window, the left of which shows what the last saved water looked like and the right window shows the effect of changes you make to this theme.

Figure 17

Theme Creation Menu - *continued*

Inland Water Window - *continued*

The sliders are moved one by one to the left and right to cause changes to the water theme. As an example, Inland Brown 1 is selected on the Inland Brown water tab in Figure 18 and displays the affect when the top three sliders in the Inland Brown window, Plankton, are moved to the right.

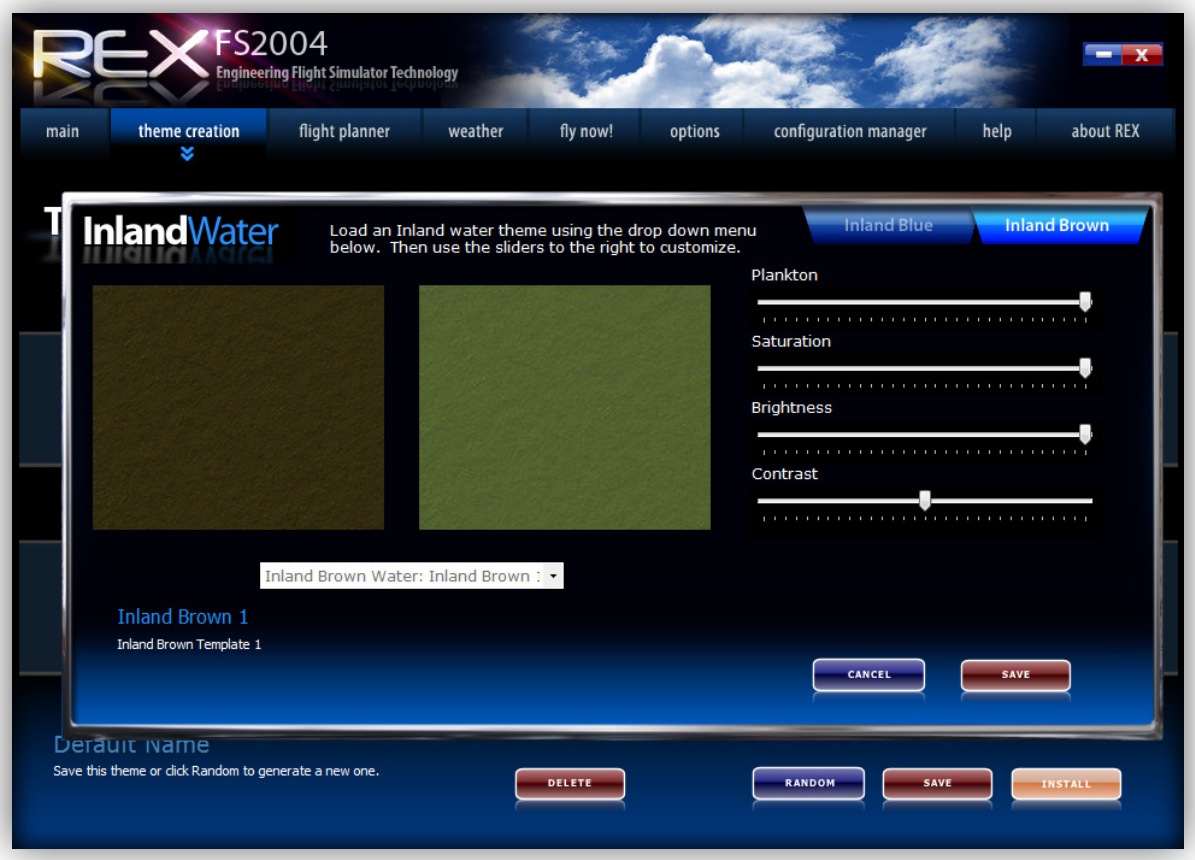

Figure 18

Theme Creation Menu - *continued*

Inland Water Window - *continued*

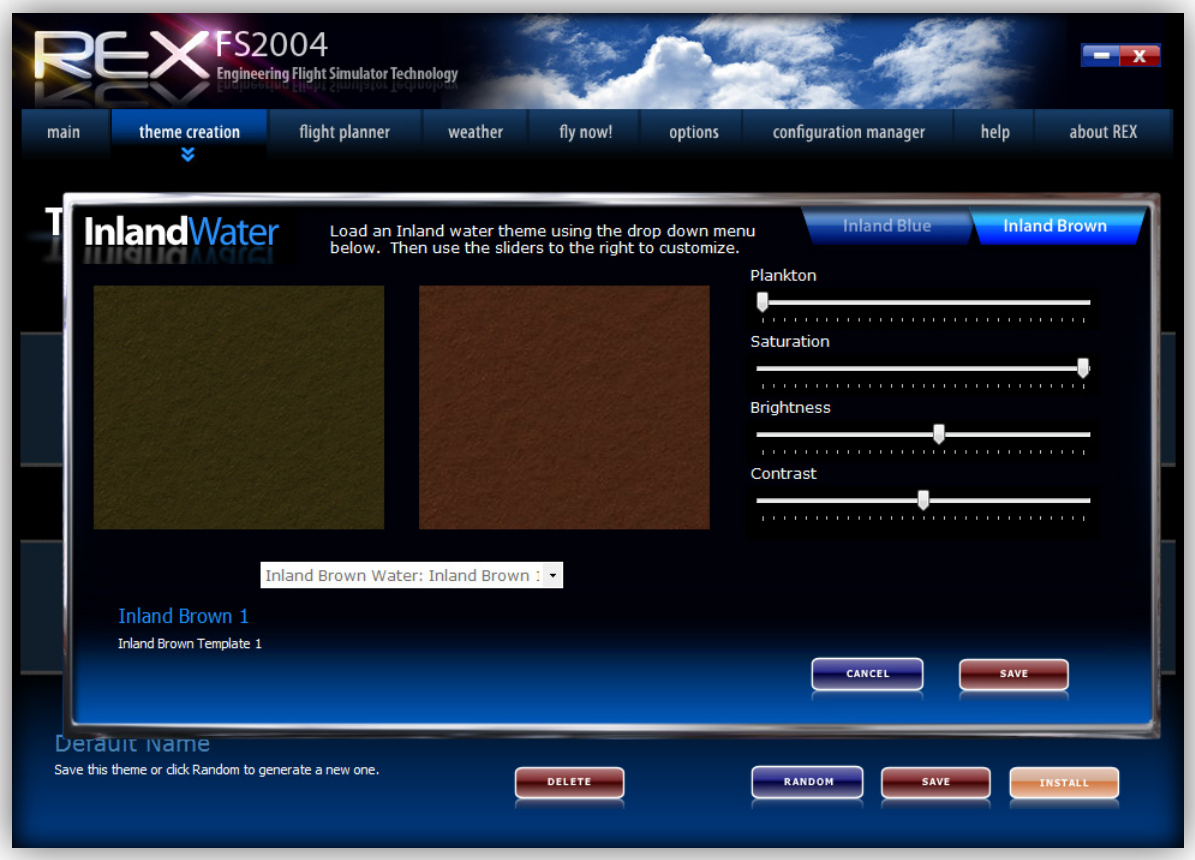

Figure 19

Figure 19 displays the affect when some of them are then moved to the left.

Watch the left of the two little windows change as the sliders are moved. The color in the right hand box can be seen to change from a green to a dark brown. Similarly, the other sliders can be adjusted until the water has just the right look. When all adjustments to the **Inland Water** have been completed, including to both tabs in the upper right hand corner, click on the **SAVE** button to save all the changes made. You will be prompted to give each water theme a name.

Theme Creation Menu - *continued*

Ocean Water Window

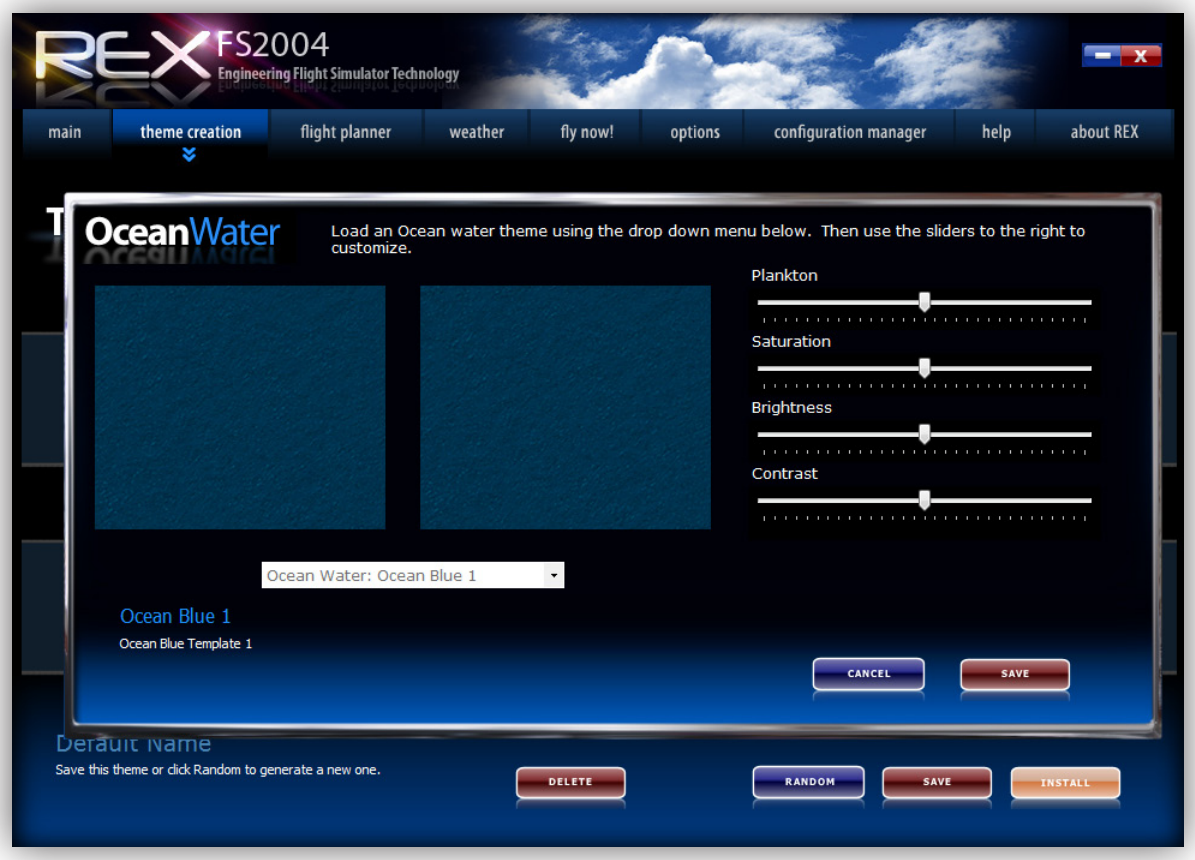

Figure 20

This same exact procedure is now used for the remaining water windows, **Ocean Water** (Figure 20) and **Tropical Water** (Figure 21).

Theme Creation Menu - *continued*

Tropical Water Window

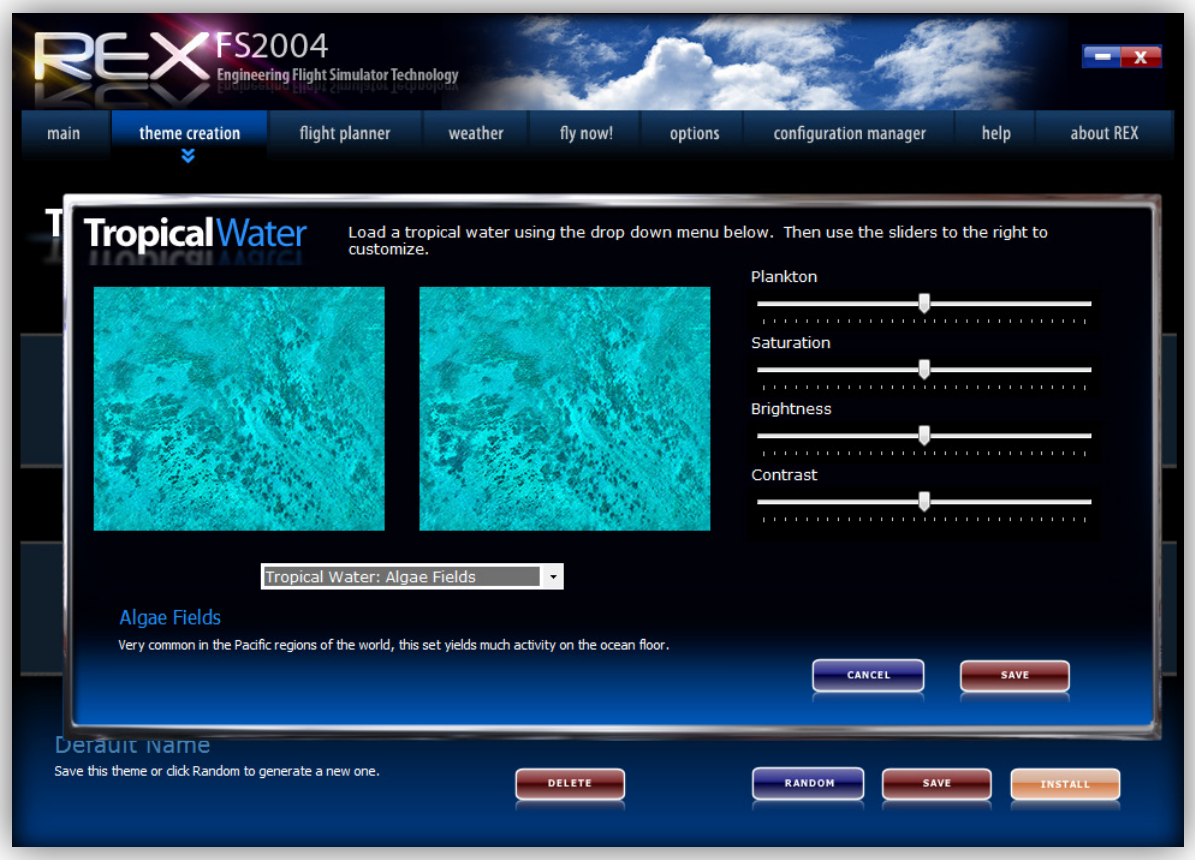

Figure 21

We highly recommend that users that have an interest in experimenting with these texture sets try out all the various texture modification tools described in these last few pages and find out what looks best to you. When you are flying in different locations, you may want to use different themes. As an example, coral reefs found at the Great Barrier Reef are not going to be found in the shallows around Hawaii nor is dark brown muddy water going to found in the rivers around San Francisco. An important thing to remember is that landclass files are what ultimately determine what is found in a certain location within FS2004. REX only provides the textures. It's the landclass that actually calls them up and into the simulator. You may want to consider purchasing some high-quality landclass add-ons now available for FS2004.

The Wave Animation, Runway/Taxiway, Airport Environment, and Sun/Lighting windows are all the same as Sky Theme and Cloud Theme windows in terms of how to modify them. Whereas the Waves (Figure 22) has only one theme to modify, the Runway/Taxiway theme (Figure 23) and Airport Environment Themes (Figure 24) each have 4 tabs (subthemes) that can be modified and the Sun/Lighting theme (Figure 25) has 6 tabs (subthemes) that can modified.

Theme Creation Menu - *continued*

Wave Animation Window

Figure 22

In this window (Figure 22), have a look at all the different combinations of wave action and animation that are possible here. Note: the wave animation only works with the FS2004 water setting of HIGH.

Theme Creation Menu - *continued*

Runway/Taxiways Window

Figure 23

Theme Creation Menu - *continued*

Airport Environment Window

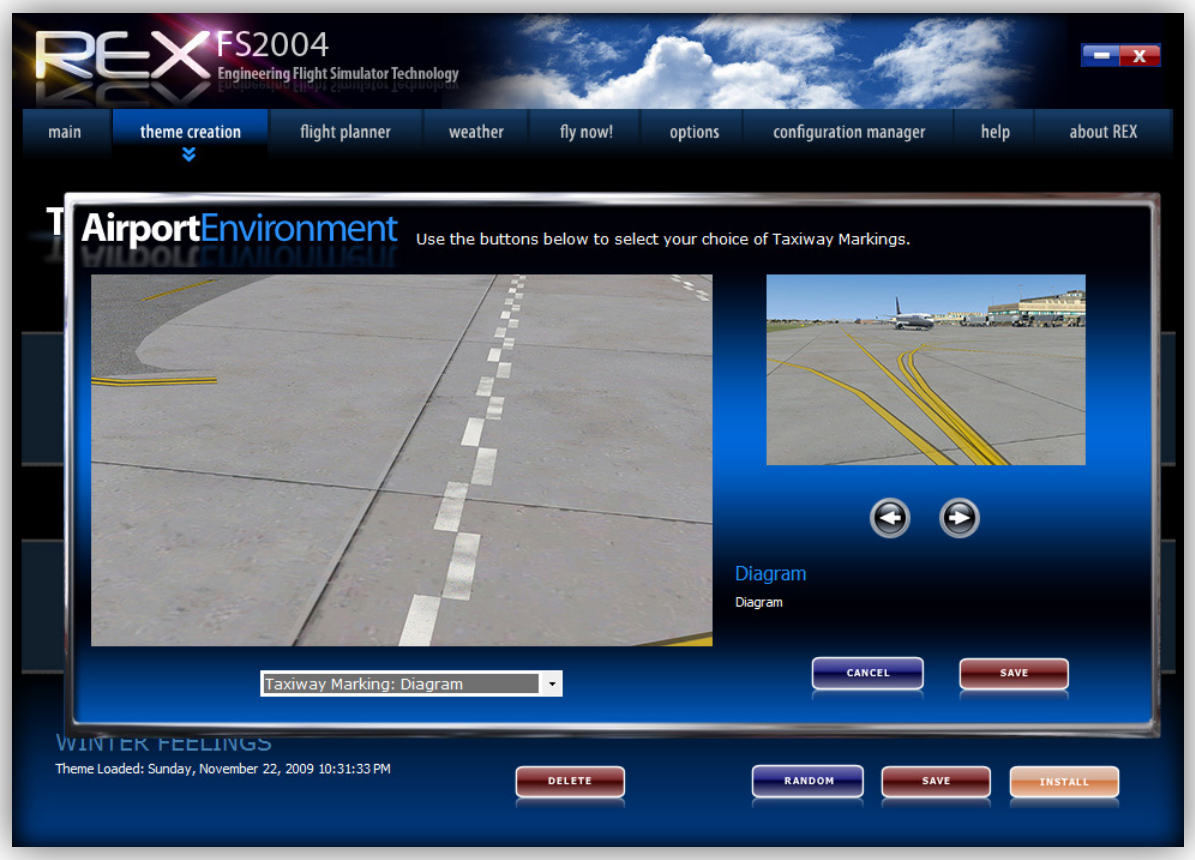

Figure 24

Theme Creation Menu - *continued*

Sun/Lighting Window

Figure 25

Theme Creation Menu - *continued*

Sun/Lighting Window - *continued*

Figure 26

Theme Creation Menu - *continued*

EFFECT/SOUNDS Window

The **EFFECTS/SOUNDS** window is for themes under development. There are currently no windows or choices that can be made under this theme however, we have some very exciting things planned for this. Stay tuned!

After all selections have been made in the **THEME CREATION** area, click **SAVE** and you will be prompted to give a name to the newly created theme. If desired, click on **INSTALL** now and the new theme will be installed into FS2004. The next time FS2004 is started, these textures will show in all their glory no matter what weather engine is used.

Textures cannot be loaded into FS2004 while FS2004 is running. Many users have made the mistake of trying to install textures while FS2004 was running. The result is a crash in FS2004, REX or both. So if you get a crash, a hang, or some other unexplained behavior while doing this process, quickly check to see if FS2004 is running.

Flight Planner Menu

The **FLIGHT PLANNER** is used when you desire to create or import an existing flight plan, review the weather along the route, and review and print out nav logs, flight plans, and weather logs. Use the capabilities of REX to examine this weather and carefully choose and install into FS2004 the textures that best represent the weather in the area you wish to fly.

The **FLIGHT PLANNER** main menu is shown below in Figure 27 and is accessed by clicking on either the **I want to follow a flight plan** large quick start button on the **MAIN** menu (Figure 3) or by clicking on the **flight planner** tab along the top of the **MAIN** menu.

Figure 27

Flight Planner Menu - *continued*

Before the flight planner screen appears, a message box (Figure 28) will pop up asking you to choose what weather you wish to use. There are three choices available: **USE REAL-TIME WEATHER, REX RANDOM WEATHER THEME**, or **ARCHIVED WEATHER**. Each of these will be described in detail in the **WEATHER** menu section of this manual. If you select **USE REX RANDOM WEATHER THEME**, you must first create your weather theme. A prompt will come up reminding you of this and then display the **REX RANDOM WEATHER THEME** menu.

If **USE ARCHIVED WEATHER** is selected, a listing of available archived data will show in the drop-down menu of Figure 28, and you must make a selection first before moving on to the **FLIGHT PLANNER** menu.

We will illustrate the use of the flight planner with the real time weather option.

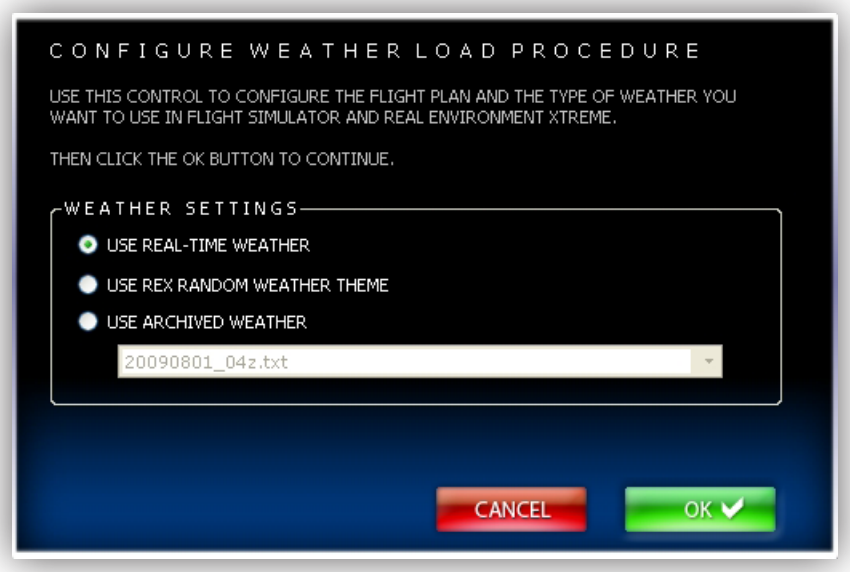
CONFIGURE WEATHER LOAD PROCEDURE
USE THIS CONTROL TO CONFIGURE THE FLIGHT PLAN AND THE TYPE OF WEATHER YOU WANT TO USE IN FLIGHT SIMULATOR AND REAL ENVIRONMENT XTREME.
THEN CLICK THE OK BUTTON TO CONTINUE.
WEATHER SETTINGS
USE REAL-TIME WEATHER
USE REX RANDOM WEATHER THEME
USE ARCHIVED WEATHER
20090801_04z.txt
CANCEL
OK

Figure 28

Looking at Figure 27 more carefully, you will see a group of flight plan import options along the left hand side, a series of searchable fields in the center of the menu that need to be filled in and a **SUBMIT** button at the bottom right of the screen.

The flight plan options on the left hand side of the screen allow you to import previously created flight plans from either REX, FS2004, FSBUILD, or FS Commander. Simply click on the **BROWSE** button and locate the flight plan desired and click on the **SUBMIT** button and the flight plan will be loaded into the REX flight planner. If some of the fields are missing, an **orange** prompt will come up as a reminder of the required fields that need be filled in.

Flight Planner Menu - *continued*

To create a flight plan, enter in the aircraft, departure, arrival and alternate airports in the appropriate fields. All these fields can be searched by pressing the **ADD AIRCRAFT** or **SEARCH** buttons. Figure 29 shows an example of the menu that comes up, in this case, the aircraft field.

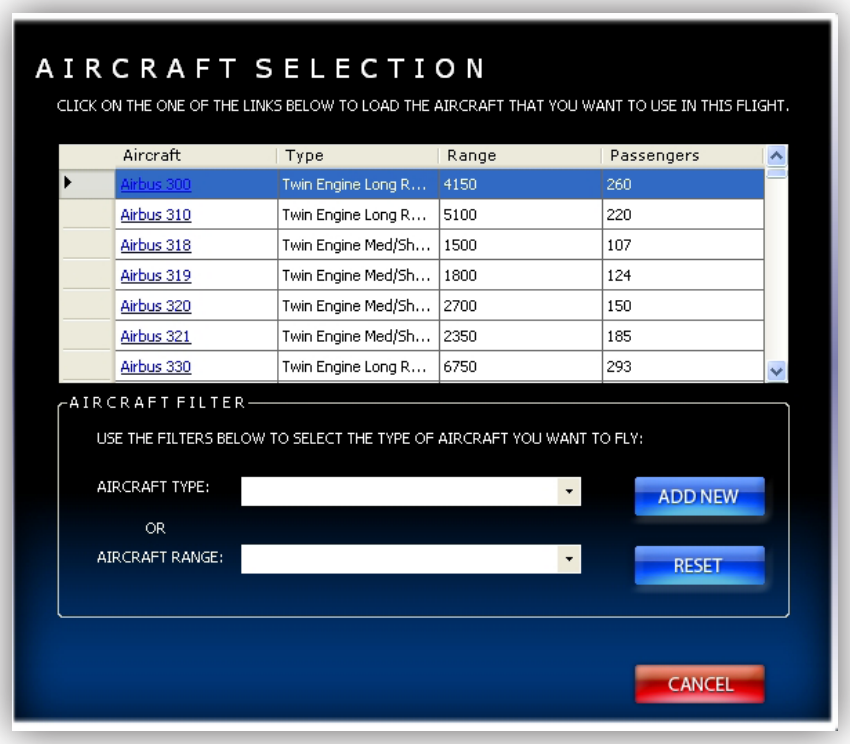

Figure 29

The other fields will have a very similar pop-up menu and the method of using these menus is the same as described below for the **AIRCRAFT SELECTION MENU**. There are four headers labeled **Aircraft, Type, Range**, and **Passengers** along with a list under each of the available choices. To select an aircraft, simply click on the aircraft and it will automatically be added to the field in the flight planner along with a default altitude and airspeed that is added to the respective fields. These can be changed by editing the fields afterwards.

Additionally, you can filter for the **AIRCRAFT TYPE** and **AIRCRAFT RANGE** as well as add in new aircraft types by clicking on **ADD NEW**. Clicking on the two filters will display a drop-down menu with the available choices. Click on one of those and the available aircraft that meet the criteria of the filter will be displayed in the aircraft menu above. Choose one of the aircraft. **RESET** clears the search allowing the search to be redone.

Flight Planner Menu - *continued*

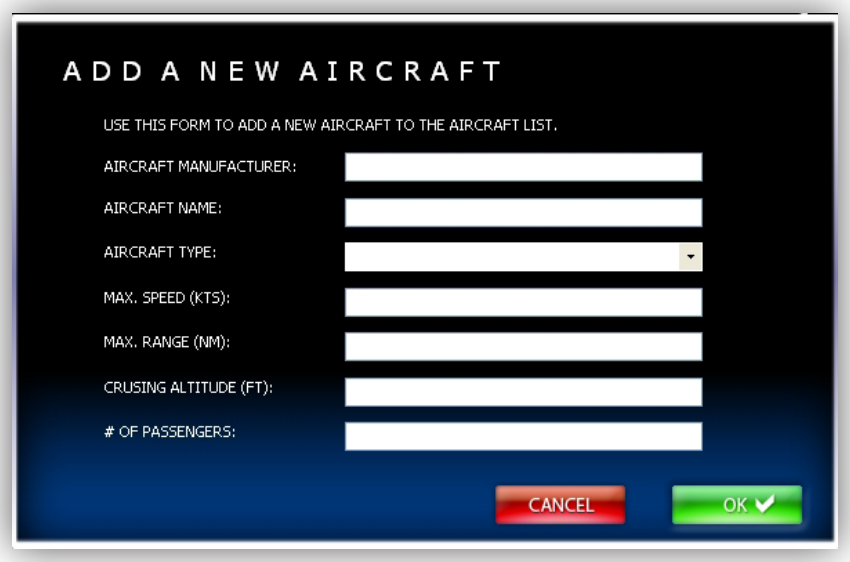

Figure 30

If the required aircraft is not present in the list of available aircraft, new aircraft can be added by clicking on the **ADD NEW** button. The **ADD A NEW AIRCRAFT** menu shown in Figure 30 is displayed. Fill in the required information and click **OK** and the aircraft will be added to the aircraft list. Click on this new aircraft in the list and the aircraft and the altitude and air speed will be filled into the respective fields. The **CANCEL** button returns to the **AIRCRAFT SELECTION** menu. Pressing **CANCEL** again returns the main **FLIGHT PLANNER** menu. Figure 31 shows a completed form for a flight from Los Angeles (KLAX) to Denver (KDEN) with Colorado Springs (KCOS) as an alternate in a Boeing 757 at a modified altitude of 37,000' (FL370), at a modified speed of 450 kts.

Flight Planner Menu - *continued*

Figure 31

At this point the data entry is finished and the plan can be submitted by pressing the **SUBMIT** button. A message will be displayed stating that REX is processing the flight plan. When finished, another menu appears, as illustrated in Figure 32. This is the result when a flight plan is imported into REX as discussed earlier and the **SUBMIT** button is selected.

Flight Planner Menu - *continued*

Figure 32

Let's take a moment to go over this screen as there is a lot of information available. Note the section called **WAYPOINT TOOLS** on the left hand side of the screen. This is the tool used to add & delete waypoints as well as access certain navigation, weather and flight plan logs, discussed below. There are 4 buttons along the bottom of the screen that force REX to refresh weather, allow REX to choose and install textures to FS2004 that best represent the weather shown on the screen, allow the flight plan to be saved, and allow the flight to be started. To the right is a map showing wind speeds (**red**) and direction (**blue arrows**) and an indication of rain or stormy weather as illustrated by the **green** through **purple** colors with increasing storm strength, **turbulence**, weather advisories, **icing/hail**, **wind shear**, and a number of other weather related conditions. The far right-hand side are zoom buttons that allow a closer look at the route. This is part of what REX calls the Weather Avoidance System or WASys for short and is described in more detail later in this manual.

Flight Planner Menu - *continued*

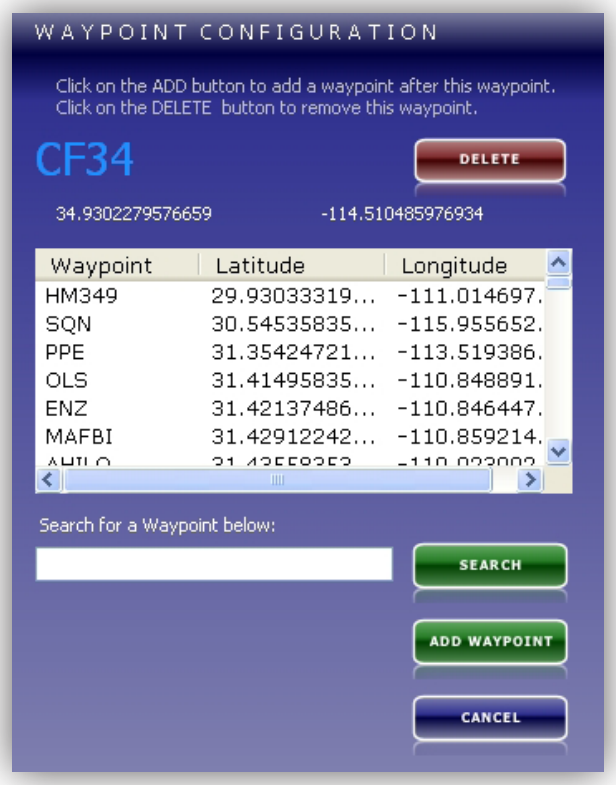

Figure 33

The **WAYPOINT TOOLS** menu shows the waypoints chosen by REX or imported from another flight plan. If you would like to add or delete waypoints from this list, click on the waypoint to be deleted. If a waypoint needs to be added, it will be added AFTER the waypoint in the current list is clicked on. As an example, in Figure 32, if a waypoint needs to be added AFTER CF34, click on CF34. When CF34 is clicked on, the **WAYPOINT CONFIGURATION** menu shown in Figure 33 is displayed.

In the upper right hand corner is the **DELETE** button. This will delete the waypoint from the route. In the center is a list of available waypoints. Scroll down until the needed waypoint is found or, to make this process easier, the waypoint can be searched for by using the **Search for a Waypoint** below box. Simply type the name of the waypoint into the box and press **SEARCH**. If the waypoint is in the database, it will be displayed in the waypoint list as will any other waypoints with the same name. Once the waypoint is in the list in the center area of the screen, click on **ADD WAYPOINT** and the new waypoint will be displayed in the list in the **WAYPOINT TOOLS** as well as in the route on the map to the right (discussed below). Since there is a lot going on behind the scenes, there will be a small delay (between 2-10 seconds) between clicking on **ADD WAYPOINT** or **DELETE** and the waypoint actually adding to or deleting from the list, so please be patient with this process. **CANCEL** returns to the **WAYPOINT TOOLS** menu and cancels any pending actions.

Flight Planner Menu - *continued*

After the route is finished, click on the **NAV LOG** button on the lower right hand corner of the **WAYPOINT TOOLS** menu to bring up the navigation logs. Figure 34 shows the **NAV LOG** screen that that first appears. Pressing the **FLIGHT PLAN** and **WX LOG** buttons opens the flight plan (Figure 35) and the weather log (Figure 36). These logs contain much valuable information related to the flight and should be reviewed carefully. The scroll bars at the bottom of each log facilitate reading of the data. The pages cannot be re-sized at this time within the REX GUI.

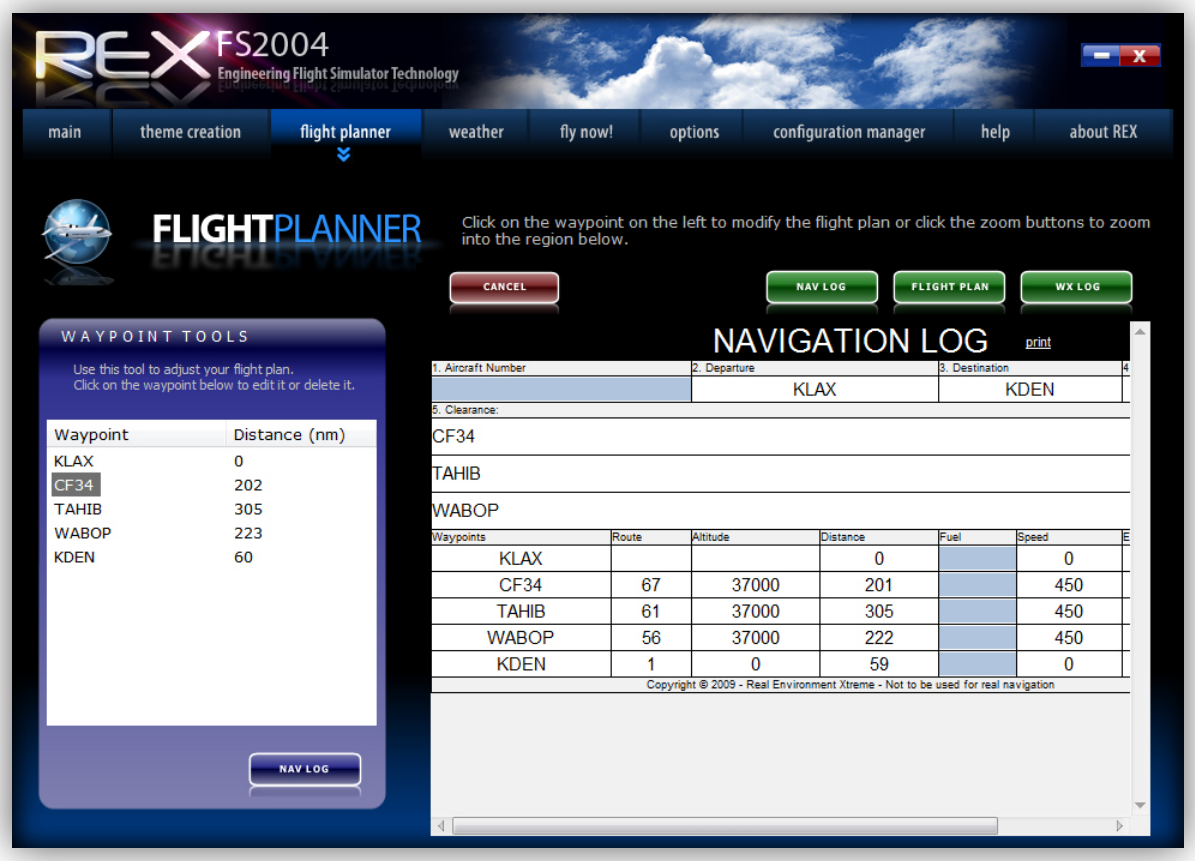

Figure 34

Flight Planner Menu - *continued*

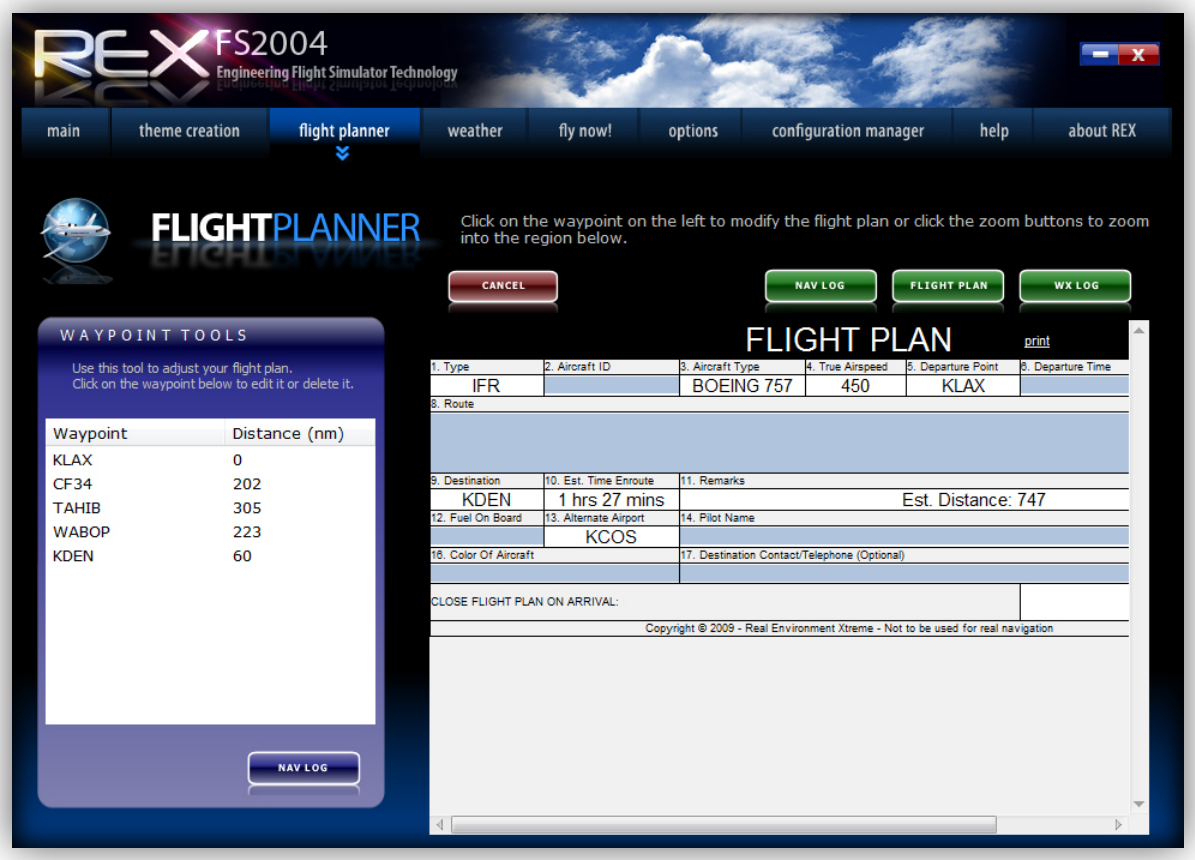

Figure 35

Flight Planner Menu - *continued*

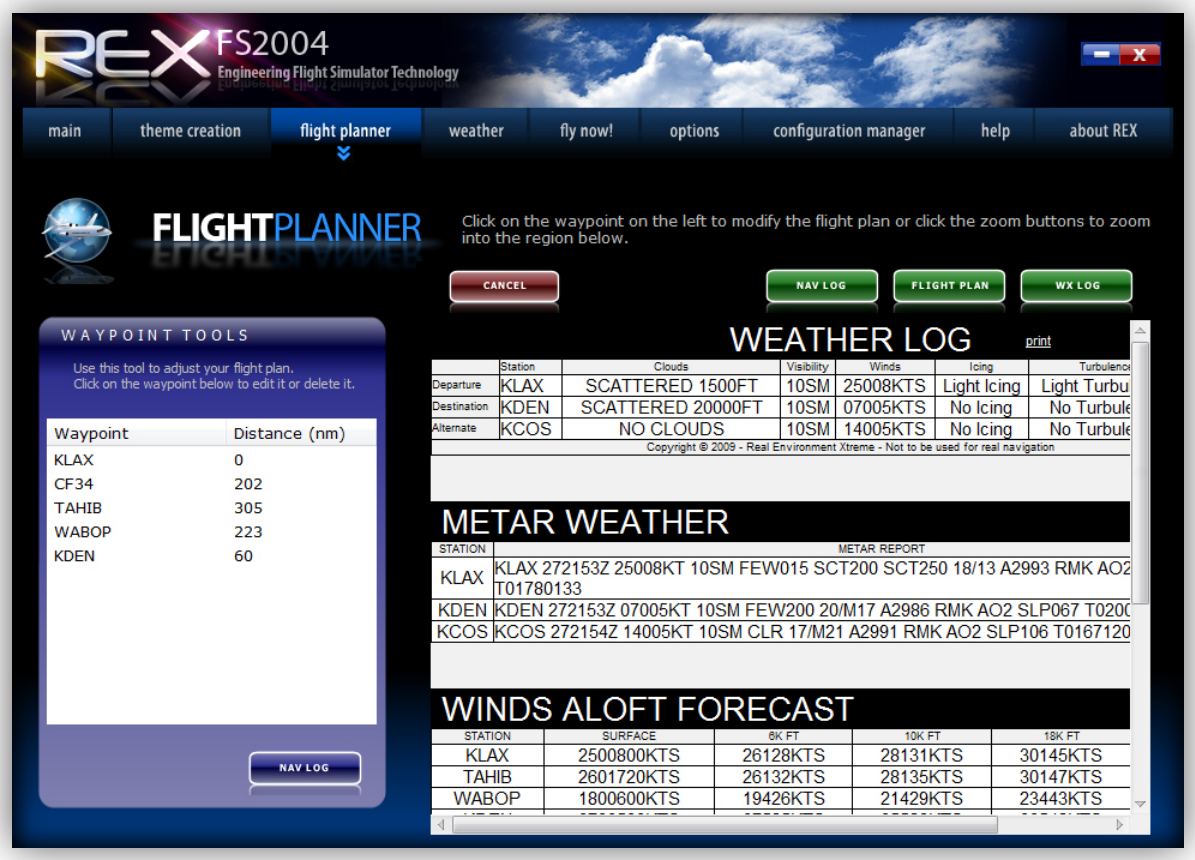

Figure 36

Press the **CANCEL** button in the middle of the screen to return to the **FLIGHT PLANNER** menu. The next item on the **FLIGHT PLANNER** page to discuss is the map in the right hand corner. This map is very similar to the in-flight WASys screen discussed in detail later but with a few exceptions. Placing the cursor at any point on the map and then clicking allows the map to be redrawn so that that click point is now in the center of the map. The flight plan route is shown on the map along with the waypoints illustrated with **purple circles**. At a glance, one can evaluate if the route chosen is appropriate given the expected weather en route. If the route needs to changed, go back to the **WAYPOINT TOOLS** menu and make the changes.

Once the route has been created and the navigation logs reviewed, there are four buttons along the bottom of the screen that need to be considered. The first one is the **RELOAD WX** button. This button is used if a fresh download of weather is desired for any reason, an example of which is a significant amount of time has passed while setting up and evaluating the flight plan and it is necessary to know if the weather has changed during this time.

Flight Planner Menu - *continued*

Next is the **WX TEXTURES button**. This button is used if you would like REX to analyze the weather conditions and pick a set of textures that match the weather conditions downloaded by REX, either real-time, REX generated random, or archived weather. Press this button and REX will begin installing textures into FS2004. **IT IS IMPORTANT THAT FS2004 IS NOT RUNNING DURING THIS STEP** and that only textures selected in the **OPTIONS** page will be installed.

Since REX can only load textures when FS2004 is not running, some of you may be interested to know how REX picks textures when you are flying between airports that are far apart and the weather is potentially very different. The program will look at both airports as well as the en route weather, and make the best estimation of the textures that are going to be needed. If the two airports are different, such as one being tropical and one is not, then the program can select textures that will represent tropical thunderstorms (typical of Hawaii) as well as clouds (more typical of San Francisco) and there will be little overlap. For a trip from San Francisco to Los Angeles where the clouds are somewhat the same, REX selects and downloads enough textures that the weather engine has enough variety to choose from so that it can pick which textures to use from that pool and depict two different BUT similar weather scenarios fairly accurately.

Pressing the **SAVE** button displays a dialogue box that will allow the current flight plan to be saved in .pln format. Type in a name and the file will be saved to the REX program folder under Flight Plans (typically ***C:\Program Files\Real Environment Xtreme FS2004\FlightPlans*** This flight plan can be imported into FS2004 via the use of the FS2004 flight planner load function after browsing to the REX flight plans folder.

Pressing the **FLY NOW!** button this starts the process by starting FS2004 (if enabled in the **CONFIGURATION** menu), the weather engine (if enabled in the **CONFIGURATION** menu) and minimizing REX to the taskbar (if enabled in the **CONFIGURATION** menu) after returning to the **MAIN** menu.

If the **FLIGHT PLANNER** menu is left for any reason, it can be returned to without losing the previous work by clicking on the **flight planner** tab of the **MAIN** menu, however, the weather will have to be refreshed. After the weather has refreshed, the previous flight plan will show up in the **FLIGHT PLANNER** menu. Clicking **SUBMIT** again will return to the previous menu with the **WAYPOINT TOOLS, NAV LOGS** and **WASys** map.

Weather Menu

Real-Time Weather

From the **MAIN** menu (Fig. 3) press the weather tab along the top of the **MAIN** menu to display the **CONFIGURE WEATHER LOAD PROCEDURE** menu as shown earlier in Figure 28 and again here as Figure 37. In order to access the **WEATHER** main page, the type of weather used must be selected. We will now describe the various types of weather available to REX users: Real-Time weather, random REX created weather and REX archived weather.

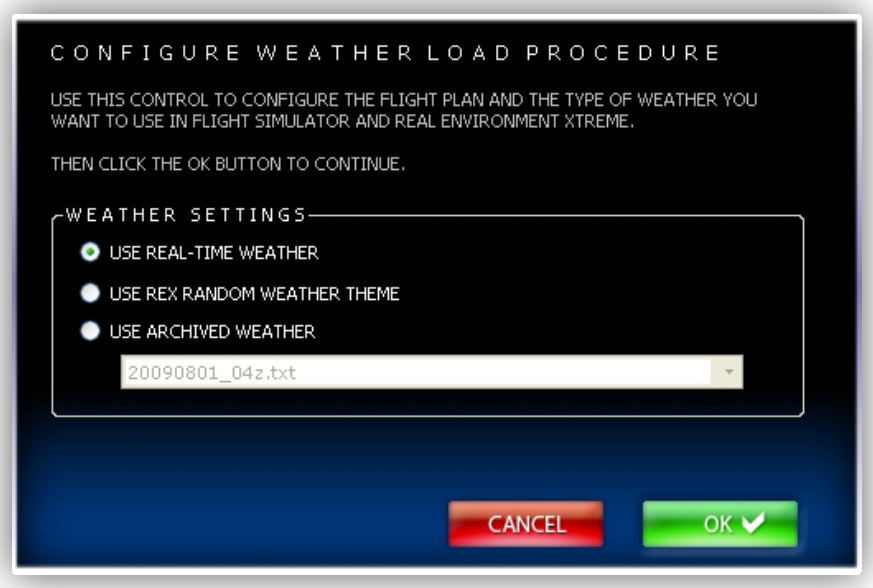
CONFIGURE WEATHER LOAD PROCEDURE
USE THIS CONTROL TO CONFIGURE THE FLIGHT PLAN AND THE TYPE OF WEATHER YOU WANT TO USE IN FLIGHT SIMULATOR AND REAL ENVIRONMENT XTREME.
THEN CLICK THE OK BUTTON TO CONTINUE.
WEATHER SETTINGS
USE REAL-TIME WEATHER
USE REX RANDOM WEATHER THEME
USE ARCHIVED WEATHER
20090801_04z.txt
CANCEL
OK

Figure 37

The first type of weather data is real time weather, familiar to most FS2004 users as real-world weather. This is a real-time download of all the metars and weather data available over the whole globe from the NOAA servers as well as TAFs and pilot reports submitted by pilots all over the world. If you selected **ENABLE VATSIM WEATHER** in the **CONFIGURATION MANAGER** page, then the data that's available will be retrieved from the VATSIM network servers. This option is selected by placing a bullet in use real-time weather and then selecting **OK**. Pressing **CANCEL** returns to the main menu. Once the weather has finished downloading, the main **WEATHER** page appears (Figure 38).

This page has a place to type in the name of an airport, a **SUBMIT** button, and **SEARCH** button in the upper part of the screen. To retrieve the weather, type in the ICAO code for the airport, or search for it with the **SEARCH** button and click **SUBMIT**. The weather data appears in the middle of the screen and there are 4 buttons along the bottom of the screen; **RELOAD WX** button, which forces a re-download of the weather data, **WX TEXTURES** button, which allows the program to choose the best textures to represent the weather, **WX AVOIDANCE** button, which brings up the **WASys** menu, **FLIGHT PLAN** button which displays the **FLIGHT PLANNER**, and a **FLY NOW!** button, which starts the flight.

Weather Menu - *continued*

Real-Time Weather - *continued*

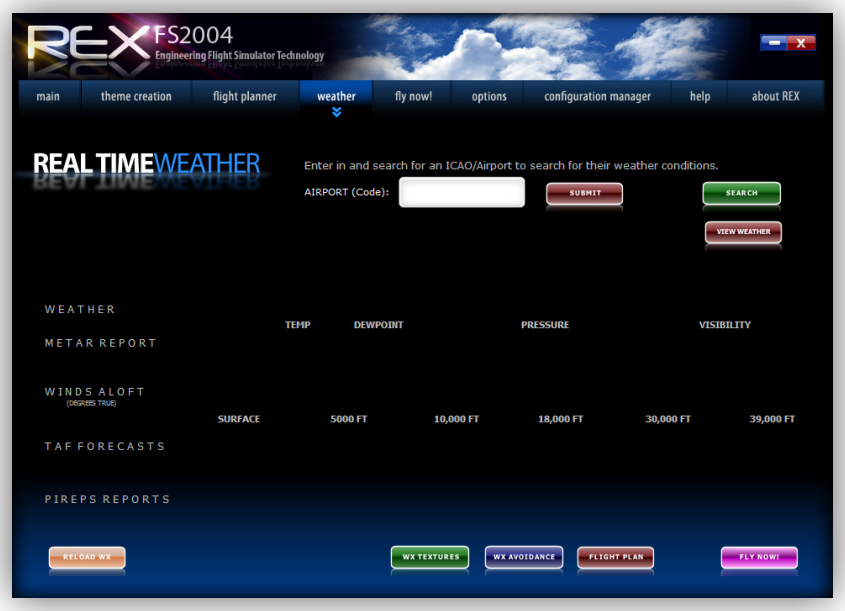

Figure 38

After typing in an airport, in this case Los Angeles (KLAX), and pressing **SUBMIT**, the weather situation in Los Angeles is displayed on the screen as shown in Figure 39 below.

Figure 39

Weather Menu - *continued*

Real-Time Weather - *continued*

Notice that the empty data fields are now populated with weather data including the metar data, winds aloft, TAF forecasts, and PIREP reports. Metar winds are referenced to true north, not magnetic north.

Pressing the **VIEW WEATHER** button brings up the figure shown in Figure 40. Note that you can view weather in different parts of the world by clicking on the headers for the various continents along the top of the map.

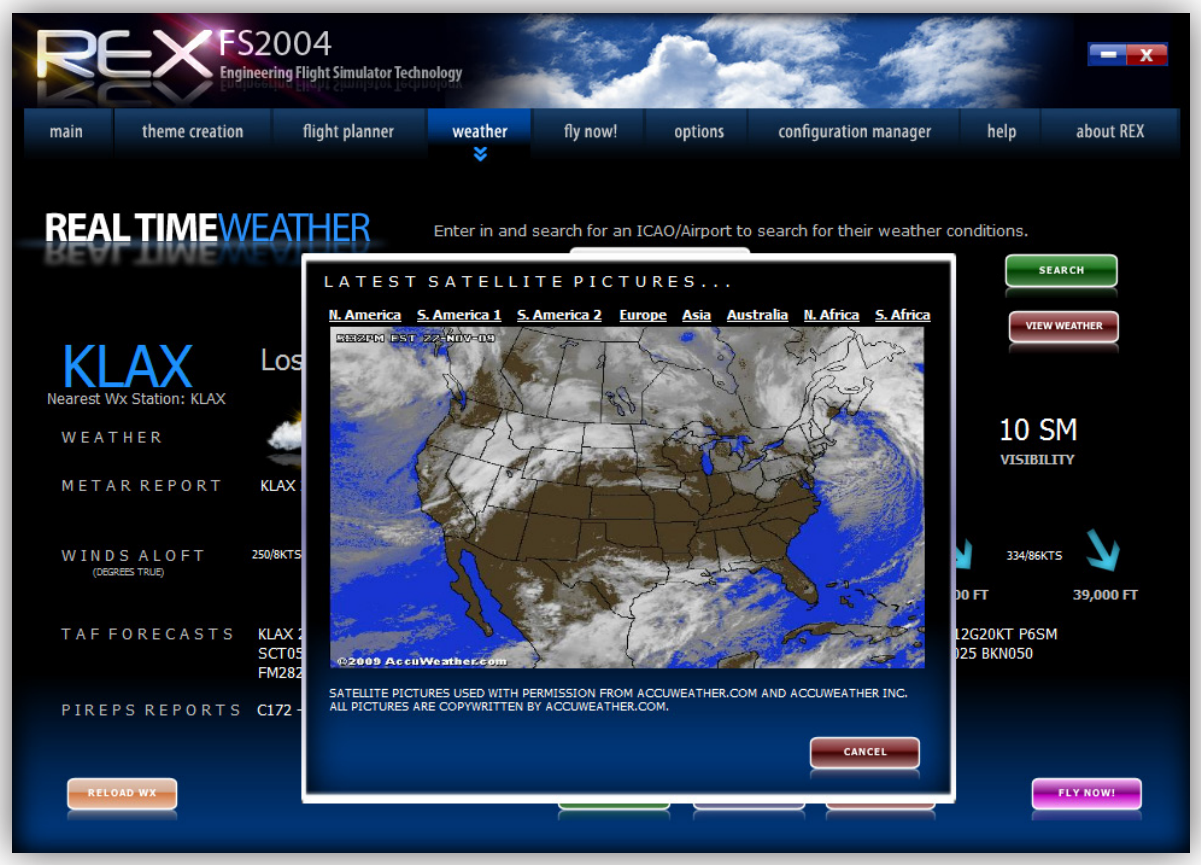

Figure 40

The function of the five buttons along the bottom of the screen have already been described above but the **WX AVOIDANCE** button deserves a bit more discussion. Pressing the **WX AVOIDANCE** button displays the screen shown in Figure 41. This is the REX internal WASys screen and is very similar in function to the in-flight WASys screen that is displayed when **FLY NOW!** is clicked.

Weather Menu - *continued*

Real-Time Weather - *continued*

Figure 41

The WASys screen is explained in more detail later in this manual in the **FLY NOW!** section. Note the weather data for the airport, KLAX in this case, is shown along the left hand edge of the WASys screen. Pressing the **BACK** button takes you back to the main **WEATHER** menu of Figure 39. After you have finished viewing the WASys window, returned back to the **WEATHER** menu, and all details of the flight have been confirmed satisfactory, click on the **FLY NOW!** button to start the flight.

Weather Menu - *continued*

REX Random Weather

REX FS2004
Engineering Flight Simulator Technology
main
theme creation
flight planner
weather
fly now!
options
configuration manager
help
about REX
RANDOMWEATHER
Use this window to create a random weather theme for flight simulator.
S T E P 1 - Select Weather Region
Enter or search for an ICAO/Airport to create a random weather scenario around..
ICAO/AIRPORT:
SEARCH
S T E P 2 - Create Weather Theme
Click on the arrows in the selection boxes below to create your weather theme. Then click the "GENERATE" button to create the weather situation for your region you selected. The weather situation will be generated on the map to the right.
SEASON:
WINTER
SEVERITY:
LIGHT
The weather may not generate in flight simulator above due to limited weather stations.
GENERATE
WX TEXTURES
WX AVOIDANCE
FLIGHT PLAN
FLY NOW!

Figure 42

The second type of weather data is a very interesting new feature of REX called **USE REX RANDOM WEATHER THEME**. This is a feature that allows the program to generate a large number of random weather scenarios for any location you desire. As it is way outside the scope of this product for this weather to be based on real world actual seasonal trends specific for each place on Earth, it allows for some interesting possibilities. Ever wanted to fly in snow in Hawaii or the tropics? You can with this feature. The main benefit of this feature though is that the weather can be a completely and different random weather scenario each time you fly and you can fly in some unusual weather scenarios not often seen in real life. Additionally, REX can choose textures that will best represent this weather and install them into FS2004 for you. This menu is accessed by placing a bullet in **USE RANDOM WEATHER THEME** and pressing **OK**. Pressing **CANCEL** returns the **MAIN** menu. The menu that is displayed is shown in Figure 42.

Weather Menu - *continued*

REX Random Weather - *continued*

This screen is characterized by two halves; the left half which contains the steps needed to create random weather and the right hand side, which contains the map showing the generated weather as well as the **WX TEXTURES, WX AVOIDANCE, FLIGHT PLAN**, and **FLY NOW!** buttons.

There are two steps to generating random weather. A location in the form of an airport needs to be specified. This is done in Step 1 via the **Select Weather Region** window. Type in the ICAO code of the airport or use the **SEARCH** button and search for it. Next, the weather generator needs to know what kind of weather you desire. This is achieved by selecting the season desired in the **SEASON** box and by selecting the severity of weather desired in the **SEVERITY** box. The next step is to actually generate the weather. This is where the fun begins. Figures 43-45 below show three examples with KLAX as the **AIRPORT, WINTER** as the season and **SEVERE** as the severity. These three were obtained by clicking three successive times on the **GENERATE** button.

Figure 43

Weather Menu - *continued*

REX Random Weather - *continued*

REX FS2004
Engineering Flight Simulator Technology
main
theme creation
flight planner
weather
fly now!
options
configuration manager
help
about REX
RANDOMWEATHER
Use this window to create a random weather theme for flight simulator.
S T E P 1 - Select Weather Region
Enter or search for an ICAO/Airport to create a random weather scenario around..
ICAO/AIRPORT:
KLAX
SEARCH
S T E P 2 - Create Weather Theme
Click on the arrows in the selection boxes below to create your weather theme. Then click the "GENERATE" button to create the weather situation for your region you selected. The weather situation will be generated on the map to the right.
SEASON:
WINTER
SEVERITY:
SEVERE
GENERATE
RAIN
SNOW
FOG
The weather may not generate in flight simulator above due to limited weather stations.
WX TEXTURES
WX AVOIDANCE
FLIGHT PLAN
FLY NOW!

Figure 44

Weather Menu - *continued*

REX Random Weather - *continued*

Figure 45

Weather Menu - *continued*

REX Random Weather - *continued*

And finally ...snow in Honolulu? We bring you Figure 46.

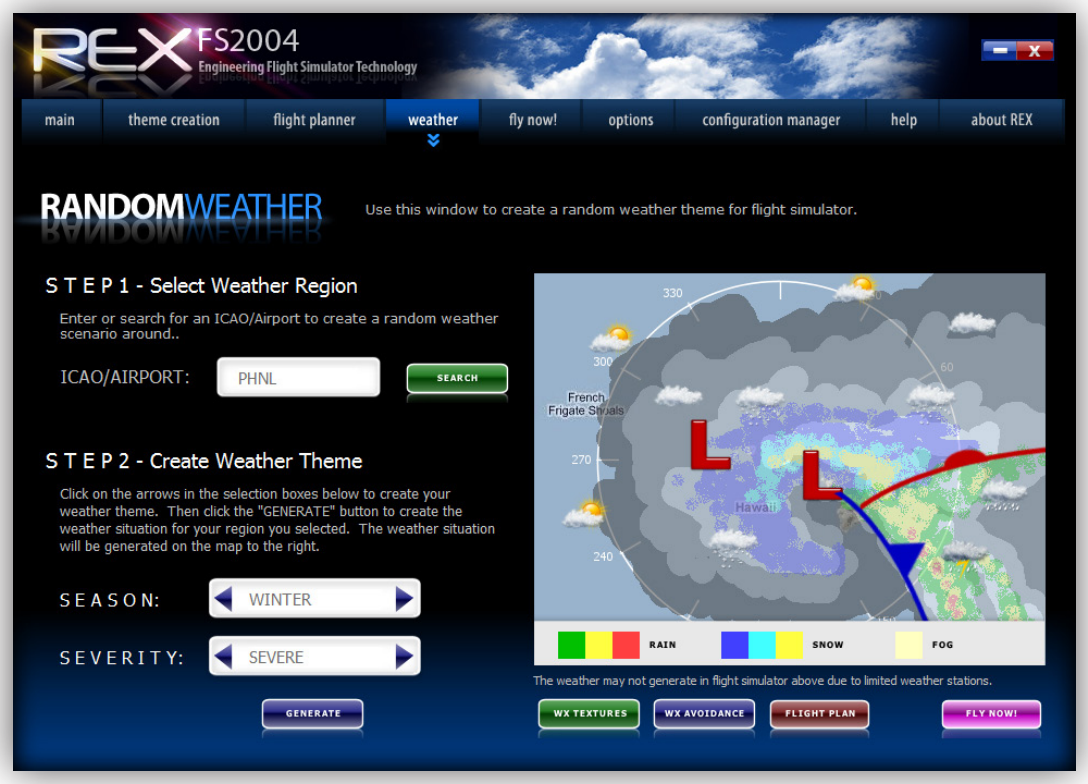

Figure 46

After the desired random weather is chosen, the **WX TEXTURES** button allows the program to install textures into FS2004 that best represent the chosen weather conditions. The **WX AVOIDANCE** button will bring up the WASys screen as described earlier. The **FLIGHT PLAN** button, and the **FLY NOW!** button starts the flight as described previously. To get from this menu to any of the other menus on the **MAIN** menu, simply click on one of the tabs across the top of the **MAIN** menu.

You can still use the Random weather feature without an internet connection however you will not get the WASys screen shown in Figure 43 but will instead get the screen as shown in Figure 47 after clicking on the GENERATE button. Note that you will see the weather patterns on the WASys screen but will not get the map. The map requires an internet connection. Not having the map does not affect how REX will generate and export weather to FS2004 and so the Random feature works without an internet connection.

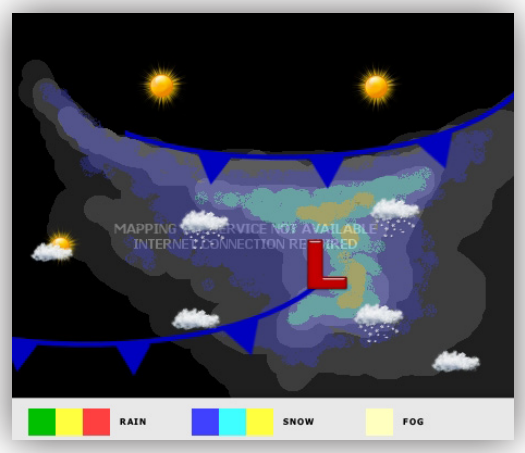

Figure 47

Weather Menu - *continued*

Archived Weather

From the **CONFIGURE WEATHER LOAD PROCEDURE** menu shown in Figure 48, place a bullet in **USE ARCHIVED WEATHER** and then choose an archived weather file from the drop-down list below. The list will contain all the weather files that are available. These are stored in the REX Program folder. Previously downloaded real-time weather along with previously generated REX random weather can be used. Once an acceptable data file is selected, showing, and highlighted in the drop down menu, click on **OK** to use this weather. The **WEATHER** main page as shown by Figure 38 will then appear unless an airport was already loaded into that page, in which case, a page similar to Figure 39 will appear with all the weather data filled in and ready to go.

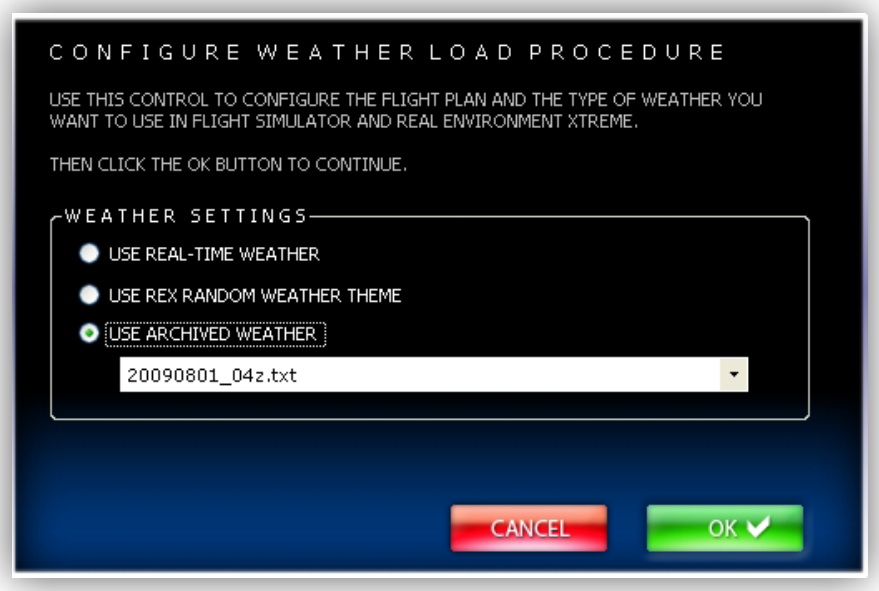
CONFIGURE WEATHER LOAD PROCEDURE
USE THIS CONTROL TO CONFIGURE THE FLIGHT PLAN AND THE TYPE OF WEATHER YOU WANT TO USE IN FLIGHT SIMULATOR AND REAL ENVIRONMENT XTREME.
THEN CLICK THE OK BUTTON TO CONTINUE.
WEATHER SETTINGS
USE REAL-TIME WEATHER
USE REX RANDOM WEATHER THEME
USE ARCHIVED WEATHER
20090801_04z.txt
CANCEL
OK

Figure 48

Fly Now!

The last tab on the main menu that needs some discussion is the **FLY NOW!** tab and along with a detailed discussion of the WASys.

After all the flight planning, downloading of weather, analyzing of weather maps, navigation logs and flight plans along with the loading of textures, it's time to get flying. The interface between you and actually getting a flight started is the **FLY NOW!** button.

Anytime **FLY NOW!** is pressed, whether it be from the **MAIN** menu (**fly now!** tab), or from one of the other submenus, REX is given the instruction to start its protocol. Most users are going to check the **Enable Auto Launch REX Weather Engine, Enable Auto Launch Flight Simulator,** and **Minimize REX when Flight Simulator Started** options. FS2004 will immediately start, a few seconds later the REX weather engine will start as evidenced by the appearance of the WASys screen, and the REX GUI will switch to the **MAIN** menu and minimize to the taskbar. If some or all of the options above are not checked, you will have to manually start FS2004 and/or the REX weather engine, and manually minimize the REX GUI to the taskbar. Figure 49 shows this startup in the early phase within a minute or two after you press **FLY NOW!**. We are almost ready to fly! Just a few more minutes.

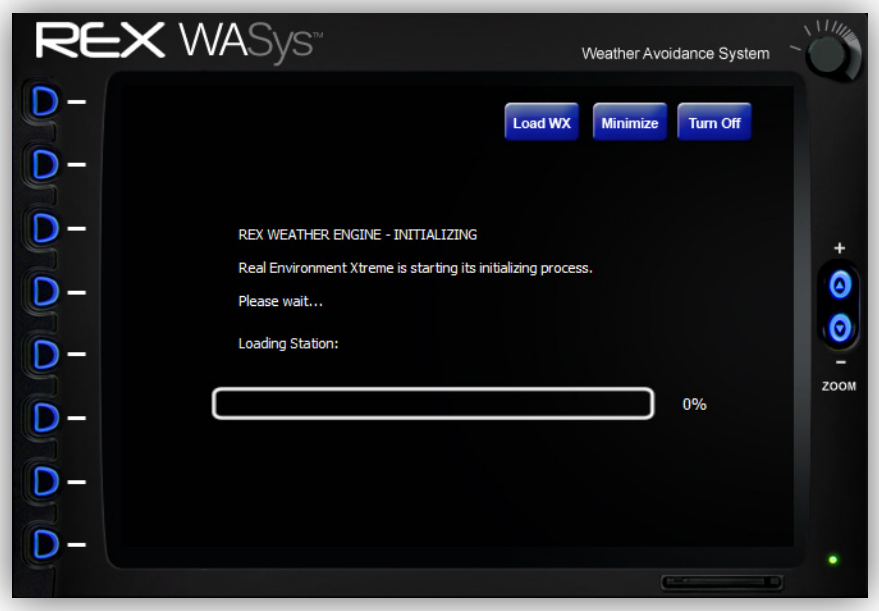

Figure 49

WASys - Weather Avoidance System

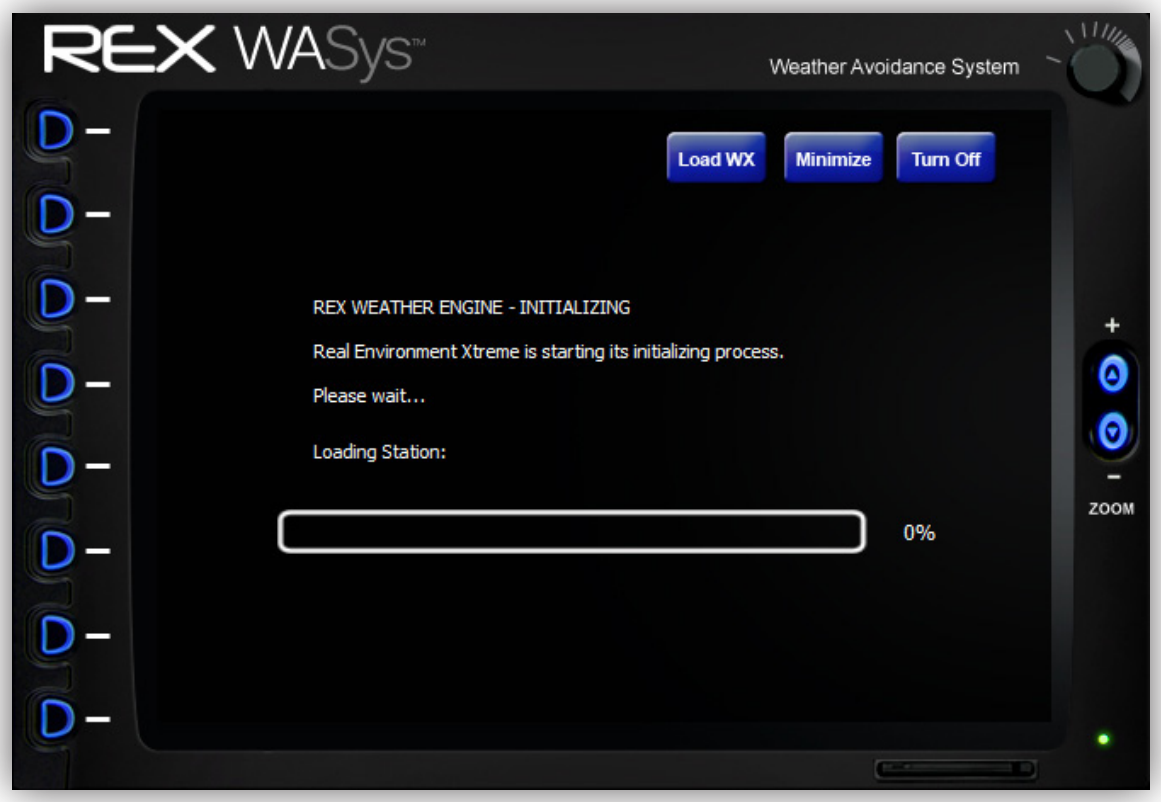

Figure 50

When the weather engine is first started, the screen shown in Figure 50 above will appear. This is the Weather Avoidance System (WASys) and is one of the most important and extensively used screens in the entire REX program. This system allows you to follow the weather along the flight path in real time as well as allowing you to directly interface with the weather engine.

The screen above shows the weather engine waiting to download weather. This is a very important screen and so it is worthwhile to spend a few minutes learning about it. Note that there are 8 buttons along the left hand side, 2 zoom buttons with a + and - label on the right hand side and 3 buttons along the top, as well as a download progress bar in the center.

The buttons we'll discuss now are the three on top. **LOAD WX**-allows you to force the weather engine to download and inject fresh weather and is what's used to start the weather download and injection process if the weather engine is started manually. **MINIMIZE**-allows you to drop the WASys screen down to an icon that will reside in the right hand corner of your system taskbar where clicking on this icon brings the WASys screen back. **TURN OFF**-shuts off the weather engine and the WASys screen, a handy feature if the weather engine needs to be turned off or stopped and restarted for some reason. The WASys screen can be moved around your desktop screen by grabbing it with the mouse and moving it to any location you desire. It cannot be re-sized however at this time.

WASys - Weather Avoidance System - *continued*

Figure 51

Once FS2004 has loaded a flight, the weather engine will take a few minutes downloading, processing and injecting the weather into FS2004 after which the WASys map appears on the screen as shown in Figure 51. In this case, an aircraft sitting on the tarmac at the Los Angeles International airport (KLAX).

The download progress can be viewed via the progress bar in the center of the screen.

Figure 51 shows the WASys screen as you will see most often. Note that along the left-hand side next to the 8 buttons are now interface displays that describe what each button's function is. In the center is a map and in the middle of the map is an aircraft symbol that indicates where your aircraft is currently located. This map will move as the flight is underway. The map can also be zoomed in and out. The current level of zoom is indicated by the distance label at the bottom right hand corner of the map. The zoom level goes from 650 nm to 65 nm in four increments. The current date and time is displayed along the bottom of the map.

WASys - Weather Avoidance System - *continued*

The function of the buttons on the left is summarized in the table below:

WASys BUTTON	DESCRIPTION
Weather Radar	Displays the latest precipitation intensity. Green represents light precipitation, Yellow represents moderate, Red represents heavy or severe.
Storm Scope	Displays the areas of where possible thunderstorms are located with electrical discharges. This is extremely helpful especially if a storm is not precipitating.
Turbulence	Displays the areas of potential cloud turbulence. Green represents light choppy or light turbulence, Yellow represents moderate, Red represents heavy to severe turbulence.
Icing / Hail	Displays areas of potential icing or hail as in the case of thunderstorms. Dark blue is light icing, Light Blue moderate icing, Yellow represents severe icing or Hail.
Wind / Shear	Displays the wind direction, wind speed, and possible wind shear. Wind shear is represented by various degrees of pink color.
Altimeter	Displays the overall altimeter readings at various airports.
Wx Conditions	Displays the possible weather conditions at various airports such as VFR, MVFR, or IFR.
Wx Alerts	Displays where the possible icing or convective areas are going to be in an hour. This will be included with an overlay of the latest weather radar.
Zoom +/-	Allow you to zoom in or out from your current location.

To change the data displayed, click on the outside blue button adjacent to the data that you want to view. Notice that the inside button toggles between On and Off as the outer button is clicked and the data on the screen changes to reflect the choice.

As you are flying along and eventually pass the update radius slider distance you set in the **CONFIGURATION MANAGER**, the weather will start to update.

WideFS & REX/FS2004

Running REX/FS2004 with WideFS is quite simple. You would install REX/FS2004 on your secondary computer along with your other programs such as squawkbox, advanced voice client, servinfo, etc.

Requirements

You must have a Registered Copy of FSUIPC and WideFS.
(Please note the license requirements have changed for these products)

Install WideFS on your secondary (FS2004) computer

1. Be sure to read the instructions manual for WideFS before you proceed further with these instructions. **IMPORTANT NOTE: Real Environment Extreme does not provide technical support for operating WideFS. Please direct any technical questions in regards to how to operate WideFS to Peter Dowson.**

2) Place the WideServer.dll and WideServer.ini files in the FS2004/Modules folder.

3) Make sure that the FSUIPC.dll is also placed in the FS2004/Modules folder.

Procedure from the "Fly Now" menu item on the main REX interface

Make certain to follow the REX/FS2004 manual instructions for setting up your FS2004 on your primary computer to run REX/FS2004.

1. On the **CONFIGURATION** screen of REX/FS2004, make sure to uncheck the option **"Enable Auto Launch Flight Simulator"**.

2. Start WideFS on your secondary computer.

3. Launch FS2004 on your primary computer and wait until WideFS says it is connected.

4. As part of the programs you launch on your secondary computer, launch REX/FS2004, then select the "**FLY NOW**" from the menu item.

5. You will see the weather change on your primary computer and you must wait until it is fully loaded.

WideFS & REX/FS2004 - *continued*

Procedure for just utilizing the "REX Weather Engine for FS2004"

Make certain to follow the REX/FS2004 manual instructions for setting up your FS2004 on your primary computer to run REX/FS2004.

1. On the **CONFIGURATION MANAGER** screen of REX/FS2004, make sure to uncheck the option **"Enable Auto Launch Flight Simulator"**.

2. Start WideFS on your secondary computer.

3. Launch FS2004 on your primary computer and wait until WideFS says it is connected.

4. As part of the programs you launch on your secondary computer, launch the **REX WEATHER ENGINE FS2004** shortcut that was installed on your desktop.

5. You will see the weather change on your primary computer and you must wait until it is fully loaded.

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This is what we'd like to see provided for each request you log:

- A separate post on the REX support forum for each issue
- Include your ORDER NUMBER from your REX purchase at the Flightsimstore.com
- A screen shot to highlight what you are talking about
- Detailed comments in your post about what you are reporting on

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Product Website
www.realenvironmentxtreme.com

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Message of Gratitude

We would like to extend a very special thanks to our families who have endured the hardships with us as we developed REX. Your support and encouragement saw us through the tough development cycle and we are happy to share this excitement with you.

Also a huge shout of appreciation goes out to our beta testing team. Their service and expertise has been vital to REX. We selected a talented and patient group of individuals and we are very grateful to you all. We consider each of you dear friends.

Finally, we would like to thank all of you in the flight sim community; your patience, support and feedback inspired us to create the best product possible. This is your milestone too and we hope that you are as proud of it as we are! Enjoy.

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